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LAKE SUPERIOR.

INVESTIGATIONS BY JOINT INTERNATIONAL COMMISSION,

1894.

WALL-EYED PIKE.

WALL-EYED PIKE--LAKE SUPERIOR.

Port Arthur Region.

History. When I first came here the Hudson Bay Company's men would catch quantities of pickerel at the mouth of the river here with seines. (Marks).

Trolling. I once went with Gov. McDonald, and we caught 57 pickerel with a trolling line. (Marks).

Black Bay. Is the place for sturgeon and pickerel. (Servais).

Close Season. They do not observe a season for wall-eyed pike. (Marks).

Cause of Decrease. Of course, with steamers coming in now, the traffic frightens them away. Besides, they have been dredging there and it probably destroys the food. This probably relates to the mouth of the river only. (Marks).

Gill Nets and Season. Used to catch a few pickerel in the gill nets, but we didn't bother with them much, as they were not worth anything then. Shipped some to Minneapolis and St. Paul. (Trombley).

In the summer gill netting he would get pickerel mostly, and depended on them mostly at that season. They would sell all right. (Trombley. The year not given).

Take some yellow pickerel in the gills, but not very many. In June they might get 1/4 pickerel. (Servais).

Pound Nets and Season. One of the pound net fishes of this region. If pounds are set in Thunder Bay during June and July, get pickerel mostly. (Trombley).

Are taken in the pounds in most abundance in August. (Trombley).

One of the principal fishes taken in the pounds. From July 15 to end of August get

more pickerel than anything else. During August my catch is 2/3 yellow pickerel. During June and July get half whitefish and the other half pickerel and trout, but more pickerel than trout. (Servais).

Pickerel are among the fishes taken in the pounds. The most pickerel are taken early in the season about Pigeon river and to the north-east, while they occur in Black Bay about the last of July or first weeks in August. (Nuttall).

Duluth Market. Get most of their wall-eyed pike from the Canadian shore. (Conventry).

General.

As a general thing, they are not an important fish in Lake Superior. (Wires).

Isle Royale.

Siskowit Lake. Occur in this lake. (Wires).

Pounds. During his time wall-eyed pike

were caught in pounds set up in the bays.

(Cooley).

Duluth Market. Get none from Isle Royale.

The shores are not suited to them. (Coventry).

Catch a few. (Flynn).

Minnesota.

Duluth Market. Get none from the Minnesota shore. This shore is not suited to them. (Coventry).

Grand Portage. Presumes now and then an odd pike is caught in the pounds there. (Flynn).

Lester River. None taken in the gill nets off here. (Borgensen).

Superior Bay.

May get a few in the gill nets. (Wires).

West End.

Takes some wall-eyed pike in his trout nets, but very few. They are the blue pike mostly, but get both blue (?) and yellow. (E.S.Smith).

Wisconsin.

Duluth Market. From the American shore they get a fair supply from the pounds on the south shore. (Coventry).

July 9, 1894, spent a few minutes in examining fresh fish in ice which had recently been received in A.Booth Company's market, Duluth. Saw yellow pike, some of quite large size, brought in from the south shore, somewhere between Duluth and Sand Island. Mr.Coventry, manager, said they had never received any blue pike, and one of the workmen said the same thing. As neither knew what the blue pike are, it is pretty good proof

they do not have them here. (Rathbun).

Pounds. In pounds on the south shore near Superior they get pike perch. Do not get so many after they get 15 or 20 miles below here. (Kalmbach).

A few wall-eyed pike used to be taken in the pounds. (Cooley).

This season (1894) the pounds down at Amnicon river took some wall-eyed pike in connection with whitefish. (Coventry).

Do not take $1/3$ as much yellow pike as whitefish in the pounds. (E.S.Smith). This was brought out in connection with the pounds near Amnicon river.

Seines. In the seines along the south shore they get a few wall-eyed pike, but this species is about played out. (E.S. Smith).

In the seines which he used to operate near Duluth and at Bark Bay used to take a

very few pickerel. (Draglund).

Sand Island. Trout and pike are taken more or less the entire season and are taken in one net. Pike are rare about the island. (Shaw).

Bark Point. Ever since he has been here they have never got any pike up around Bark Point and in that region. (Johnson).

Bayfield Region.

On the south shore near Bayfield they have got, within a year or two, more wall-eyed pike than they ever got of whitefish. (Cooley). (This does not agree with the statements of others. Rathbun).

Bayfield Market. The only place we get wall-eyed pike from is in the pound nets at the mouth of Chequamegon Bay. (Johnson).

They are sold at the same price as whitefish and trout. All the Jews in this coun-

try want wall-eyed pike, and nothing else.
(Johnson).

Chequamegon Bay.

Understands that in Chequamegon Bay they used to make a good deal out of them, but that they have not been catching many lately. (Wires).

The fishermen at Light House Point (mouth of Chequamegon Bay) get a few wall-eyed pike in the pound nets. This is the only place we get any wall-eyed pike. (Johnson).

Some wall-eyed pike are taken in the pounds on the south shore of the bay in the spring. (Mathson).

Season. They begin to get wall-eyed pike in the bay about June 1, and get them up to near the middle of July, but the fishing has about stopped now, July 11. (Rathbun, from stranger).

Abundance. There are comparatively few

taken in the bay. (Rathbun, from stranger).

Keweenaw Peninsula.

Bete Grise. Never took pike in his pounds or gills. (Croze).

Has taken a few pike in his pounds. (Berrault).

Portage Entry. Used to be fished for at the mouth of the river and canal. (Quinn).

Marquette.

Do not get the wall-eyed pike. Get none around Grand Island. Once in awhile catch one in the pounds in the bay. (Grant).

Once in awhile they get one in the pounds. (Anderson).

Get very few in gills. Only got one since he started. (Hanson).

Grand Marais.

A few pike taken. (Connable).

Whitefish Point.

Might occasionally get a wall-eyed pike in the seines, but very seldom. (Clark).

Get some (a few) wall-eyed pike in September. Outside of that month they get very few in the pound nets. Never get them in the gill nets unless it is down in the bottom of the bay. (Endress).

Get a run of wall-eyed pike in August, which is growing smaller each year. The most weigh from 4 to 6 pounds. Hardly ever get any small ones. The run does not continue long. This relates to the pounds about Whitefish Point. (Shaver).

Get a few, but not many wall-eyed pike in his seines. (Kimball).

Whitefish Bay.

In the spring we used to catch a good many pickerel with the whitefish, principally at Taquamenon. They go up Taquamenon river to spawn. (Roach).

The wall-eyed pike are more or less in the bottom of the bay and over in Taquamenon Bay, and as you get out of there they might be taken occasionally along the shore, but only to a slight extent. Thinks they do their spawning in Taquamenon river. (Enderess).

They get a few in the bottom of the bay in the spring in their pound nets. (Pratt).

Get a few odd wall-eyed pike in August. Never get them in the spring. (Johnson).

Fix says he catches very few in his pounds. I saw some in his catch to-day, but there were not many. (Rathbun).

In the spring, with the pounds which are

set near the mouths of rivers, they catch the yellow pike first, and continue to get a few all summer; but they are most abundant when the nets are first set. This is in the lower part of Whitefish Bay. They are good sized. (Ainsworth).

Are taken in the pounds near the mouth of Taquamenon river, but are not very plenty. (Ainsworth).

Waiska Bay.

Some pike are said to be taken in the pounds here. (Rathbun).

The pound set up Waiska river, about 1/4 mile above its mouth, took pike. (Kirvan).

St. Mary's River.

Mud Lake. Used to catch lots of wall-eyed pike there. Years ago we used to go down in Mud Lake and catch 600 or 700 bar-

rels in 6 or 7 days, with a seine and little pound nets. We set the first pounds in Mud Lake that were ever set there. In the summer time we did not get any of these perch pike, and where did they go to? (Roach).

Spawning. The wall-eyed pike spawn here in the spring just as soon as the ice moves out. They have just begun to spawn when the ice moves out. The height of the run is over in 5 or 6 days. (Roach).

In the spring the wall-eyed pike occur in abundance down the river here. (Roach).

The pounds in Lake George take wall-eyed pike. (Wires).

Catches pike when trolling for brook trout in the rapids between May and September. (Kirvan).

The wall-eyed pike are very abundant down at West Neebish, but they do not occur much up here (Soo). They like still water and

grass bottom, and there are little reefs down there with wild rushes; and they hang around places like that. They get them in their pound nets down there, and get quite a lot up the Waiska river also. (Kirvan).

North Shore.

They do not get many wall-eyed pike, but a few in Bachewauaung and Goulais Bays, and a few at Agona river. Sturgeon and wall-eyed pike together would compose about $1/3$ of their catch in Bachewauaung Bay. (Ganley).

WALL-EYED PIKE; QUALITY -- LAKE SUPERIOR.

Port Arthur.-- The pickerel are certainly a nice fish, next to the salmon trout or whitefish. It is a firmer fish than the pike, and when you cook it the flesh comes off in scales like the whitefish, and it is sweeter than the pike.--(Marks).

Pickerel are a more hardy fish than the whitefish.--(Trombley).

WALL- EYED PIKE; PREDACEOUS -- LAKE SUPERIOR.

Wall-eyed pike are destructive to white-fish spawn.--(Ganley, Soo).

WALL-EYED PIKE; PROTECTION --- LAKE SUPERIOR.

Would not try to protect the wall-eyed pike in anyway, because there are not enough of them caught.--(Roach).

SAUGERS--LAKE SUPERIOR.

Inquiries were made every-where respecting this species, but its presence was denied every-where except at Port Arthur, as follows:

Port Arthur. Knows what the sauger is. There are a very few of them here, but very seldom catch one. Has seen them in Black Bay. Catch them mostly in the bottom of the bay where the water is shallow, among the pickerel. (Trombley).

STURGEON.

STURGEON--LAKE SUPERIOR.

Port Arthur. Are occasionally taken in the pounds. Black Bay was a great place for sturgeon. (Marks).

Used to get quite a few sturgeon. Never got them before pound nets were put in. After the pounds were put in used to get a good many. Black Bay and Sturgeon river were where we got the most. Used to get a few in Thunder Bay, but not many. Get nearly as many here now as we used to. My brother has penned them; had 1,800 one time not long ago. Penned them for awhile, and then they got through and he lost them. I have caught more sturgeon than any one else around here. It is only within a few years that they would buy them at all here. (Trombley).

In 5 pound nets in a year we might catch about 2 tons on an average, and perhaps a

little more. Get the sturgeon in June and July, and a few of them right along, but this year got the most in July. Black Bay is the place for sturgeon. (Servais).

Among the fishes taken in the pounds. (Brunson).

An occasional sturgeon is taken. No sturgeon of any note are taken in gill nets. Once in awhile an odd one would become entangled. Used to take one once in awhile in the pound nets, but were worth nothing in the market. (Davis).

Are not taken in gill nets. (Murray).

Are among the market fishes taken in the pounds. (Nuttall).

No sturgeon are caught in the gills. (Maloney).

Isle Royale. We very rarely catch a sturgeon. (Johns).

Has never seen sturgeon around the island.

The water seems to be too cold for them.

May catch a few up in the bays. (Flynn).

Minnesota. Take an occasional sturgeon, but not many, in the pounds at Grand Portage. (Wires).

No sturgeon taken in the gill nets off Lester river. (Borgensen).

West End. Never got any sturgeon at this end of the lake except a few in pound nets. They were a very small part of the catch. (Cooley).

Do not get many sturgeon in the gill nets. Years ago they used to catch a good many in the pound nets, but they were never very abundant here. (E.S.Smith).

Wisconsin. Do not get many sturgeon. They were never a common fish in this part of Lake Superior. We had 300 pounds come in yesterday from pounds on the south shore, and probably get that amount twice a week.

A few sturgeon were taken this spring in the pounds near Amnicon river. (Coventry).

In seines which he used to operate near Superior Entry and at Bark Bay used not infrequently to take sturgeon weighing 50 or 60 pounds. They were not marketed. (Draglund).

Apostle Island region. Sturgeon have never been abundant here. Might perhaps get 4 or 5 tons in a season at the most. (Johnson).

Never get any sturgeon in seining. (Chafe).

A few are taken in the pound nets about Sand Island. (Shaw).

Take a few sturgeon in the pounds. It is about the time now that they should get them. (La Belle).

Sturgeon are seldom caught in their gill nets, five or six in the whole season. (Swannes).

Chequamegon Bay. Some sturgeon are taken

in the pounds on the south side of the bay in the spring. (Mathson).

Bete Grise. Never took sturgeon in his pounds. (Croze).

Perhaps 2 or 3 taken in his pounds during a season. (Berriault).

Portage Entry. A few are caught, but are not marketed, being always smoked and eaten, or sold to local dealers or directly to consumers. (Quinn).

Marquette. Sometimes catch a sturgeon in the pound nets, but very rarely. They do not fish for them. Probably 15 or 20 would cover all the pound net fisheries for the whole season. (Grant).

Never get many sturgeon here. They catch some in the pound nets, but very few. (Goodwin).

Once in awhile get a sturgeon in the pounds, but has not seen any for the last 4

or 5 years. Sturgeon never have been abundant since he has been here. (Anderson).

Never seine any sturgeon. (Lorntzson).

Never get any in his gill nets. (Hanson).

Grand Island. Down at Grand Island at one time he got 11 or 13 in one pound net, but that seemed to be just at one time, and does not think there has ever been any since to speak of. Sometimes catch 2 or 3 at a time. (Goodwin).

Down at Grand Island he hears they get lots of sturgeon. (Anderson).

Grand Marais. A few sturgeon taken here. (Connable).

Whitefish Point. Have caught not over half a dozen altogether in the seines. Very seldom get sturgeon in the gill nets. It would be only when they got tangled up in the line or web of the net. They have never been very abundant around here. There is a

variety of small rock sturgeon and we occasionally get some of them, but very seldom. On this side of Whitefish Point there are very few sturgeon. (Clark).

Sturgeon have never been fished for here with gill nets. Our sturgeon season has not come on yet. Do not get them until in September, but a great deal depends upon what quarter the wind is from. One year, 4 or 5 years ago, they got quite a few sturgeon. (Endress).

Yesterday took 3 in the pounds inside the bay. Used to take large quantities of rock sturgeon. The back was saw-like, and so sharp it would cut the hand in handling them. Thinks they were simply the young of the ordinary sturgeon, as he never saw other kinds of young sturgeon. During the last 2 years have not taken many. (Shaver).

Get very few sturgeon in the pound nets

here. (Pratt).

They get sturgeon in the pound nets, but not in the seines. (Kimball).

Whitefish Bay. Down where you get the river water there are more sturgeon. (Clark).

Of late years the sturgeon has brought as much in the market as the whitefish, but 25 or 30 years ago we used to let them go as we had no market for them. The first sturgeon I ever salted was for the captain of a vessel here. I think I would rather have a piece of good sturgeon than any other fish there is. The sturgeon have been known to be so thick in the Taquamenon river that you could almost walk across the river on them. The rock sturgeon is very scarce; never saw many. Would perhaps catch one rock sturgeon when you would catch 20 of the others. Never saw the young of the smooth sturgeon, because I never paid any attention to them,

and perhaps would not be there at the right time. Years ago we never used to get any small sturgeon. The rock sturgeon are better eating than the other sturgeon.

They are more plentiful down in the bottom of the bay. (Endress).

Taquamenon river is full of sturgeon in the spring. Thinks the nets about the mouth of that river catch them up. Occur in this river to some extent all summer. The saw logs in the rivers have hurt them very much. (Shaver).

They go up Taquamenon river. (Pratt).

Get an odd sturgeon, but nothing to speak of. (Johnson).

Saw 18 or 20 sturgeon landed at the Soo from the pound nets of J.Fix. (Rathbun).

The pounds near the mouth of Taquamenon river catch sturgeon, but they are not common. (Ainsworth).

3 Waiska Bay. A few sturgeon are said to be taken in the pounds. (Rathbun).

St. Mary's River. I have taken 32 sturgeon out of a pound net in Mud Lake in one night's fishing. (Roach).

There are sturgeon in Hay Lake and Lake George, but they are not plenty. (Kirvan).

Very rarely take a sturgeon in scooping. Does not know of any having been taken the past spring. In the spring of 1893, 5 or 6 were secured in their scoops. It is difficult to manage the sturgeon, and they have to be very quick, seizing them in their arms and throwing them into the boat or they will escape. (Bouche).

1 North Shore. Sturgeon and wall-eyed pike together in Bachewauaung Bay would probably be about 1/3 of their catch. They get a few sturgeon at the Lizard Islands; probably 3 or 4 tons in a season. (Ganley).

They catch a few sturgeon in Bachewauaung and Goulais Bays. (Ainsworth).

They get a few sturgeon in Goulais Bay, but very few. Does not know if they were ever abundant on that shore. Never heard of their being taken in any great abundance in Goulais Bay, and has been inquiring of the Indians for sometime. (Elliott).

STURGEON --- ST. MARY'S RIVER.

I have taken 32 sturgeon out of a pound net in Mud Lake in one night's fishing; in among the yellow pickerel.--(Roach).

STURGEON; SIZE.

Port Arthur. Our sturgeon here will average only 15 pounds dressed; 90 pounds dressed is the heaviest I ever got here. (Trombley).

Sturgeon under 20 pounds dressed should not be taken. But you would only catch about 30 or 40 in a season if you limited them to that size. (Servais).

West End. Would very seldom get a sturgeon weighing as much as 30 pounds. Once in awhile would get one weighing as high as 50 pounds, but very seldom. (Cooley).

Wisconsin. The sturgeon from the south shore would average about 15 pounds apiece, and measure about 2 1/2 to 3 feet long. (Coventry).

On July 9, 1894, saw a sturgeon in Booth's market, Duluth, which weighed 41 pounds dressed. (Rathbun).

Used not unfrequently to take sturgeon weighing 50 or 60 pounds. (Draglund).

Apostle Island Region. They do not run very large, probably 25 to 40 pounds. Once in awhile get one that weighs 50 pounds, but it is rare. (Johnson).

Some of them would grow to be 120 pounds. He has had them this week weighing from 30 to 50 pounds. (La Belle).

Chequamegon Bay. Does not buy sturgeon and knows very little about them, but thinks they are not very large here. Probably run from 8 to 10 pounds apiece, dressed. (Mathson).

Marquette. Will weigh from 25 to 30 pounds, round. They are what we call rock sturgeon. (Grant).

Caught one here once that weighed 100 pounds. (Goodwin).

Whitefish Point. Their range in size

would have been from 40 to 60 pounds. (Clark).

Yesterday I took 3 in the pounds inside the bay, the largest weighing about 80 pounds, round, the smallest about 2 1/2 feet long. The largest I have ever taken in the pounds about here weighed 110 pounds. (Shaver).

Whitefish Bay. The biggest sturgeon I ever took weighed 120 pounds. I never saw a rock sturgeon that would weigh over 9 or 10 pounds. He would be about 2 feet long alive. (Roach).

Small sturgeon they let go. Their minimum size of sturgeon is 6 pounds, dressed. (Johnson).

They are not as large as the lower lake sturgeon. A 60 pound sturgeon, round, is a large fish up in this country. (Ainsworth, east end of lake generally).

At the Soo examined sturgeon landed from

pounds of Joseph Fix, Taquamenon Bay. There were 18 to 20 altogether, ranging in weight, dressed, from about 4 pounds to 60 pounds. The largest weighed about 90 pounds when alive. The two smallest were not over 2 feet long, dressed. (Rathbun).

St. Mary's River. The sturgeon taken in the scoops weigh about 50 pounds apiece. (Bouche).

North Shore. Run in size from 25 to 50 pounds. (Ganley).

STURGEON; FOOD.

Port Arthur. Destroy quantities of the eggs of both whitefish and trout. (Trombley).

Feed upon the eggs of whitefish. (Davis).

Bete Grise. Eat whitefish spawn. (Croze).

Eat the eggs of whitefish. (Berriault).

Whitefish Point. Has opened sturgeon and found fish spawn in the stomachs. Could not tell what the spawn was, but thought it was too small for lake trout. (Clark).

Whitefish Bay. They follow up the pickerel (wall-eye) and live on their spawn. The pickerel go up the rivers to spawn. In the Taquamenon river, about the time the pickerel are there spawning, the sturgeon follow them up. (Roach).

STURGEON PREDACEOUS---LAKE SUPERIOR.

Bete Grise.---Thinks that the sturgeon eat the spawn of the whitefish (Croze).

Bete Grise.---Sturgeon eat the eggs of the whitefish (Berriault).

STURGEON; SPAWNING.

Port Arthur. The sturgeon go up the river to spawn, the same as the pickerel. Do not think they spawn in the lake at all. They would go up Black Sturgeon, Wolf, Clearwater and Kaministiquia rivers. They go up about June 15, and come down along about July 20. A sturgeon weighing 30 pounds alive will spawn. This would be about 3 1/2 feet long. They spawn when they are very small. (Trombley). See further under caviar.

The sturgeon go up the rivers to spawn in the spring. Do not stay up the rivers very long, but hang around the mouth longer than at another place. I think they come out along in June or July, coming out with no spawn in them. He catches them when they are coming out with no spawn in them, and a man 30 miles up Black Bay, at the mouth of

the river, catches them when they are going in with spawn in them. (Servais).

Whitefish Bay. Believes sturgeon spawn all summer. (Roach).

Taquamenon river is chock full of large sturgeon in the spring which go there to spawn. They may enter other rivers to spawn, but doesn't know of others near here where they go. Sturgeon may spawn more or less all summer, but is certain they do so mainly in the spring. (Shaver).

STURGEON; CAVIAR.

Port Arthur. They used to make caviar here, but not now. They do not get enough eggs is the reason. They would get the eggs about June 15, when the fish were going up the river to spawn. Would not get them after they came down. Would get them again in the fall. Out of 100 sturgeon about $2/3$ would have caviar in the spring, and in the fall they do not get as much as that--just an odd one occasionally. One spring I saved 500 sturgeon and got 12 kegs of caviar, weighing 140 pounds each. That was 2 years ago. I lost it, however. I was selling to a German at that time, but Brunson said he could handle it, and so I let him have it, and the consequence is it is lying in the warehouse yet. I was getting 16 cents a pound for the caviar. We got 80 cents a

pound for the sounds or isinglass, as we call it. (Trombley).

I have not seen any caviar for 2 or 3 years. One man, however, got some this spring, but just a little. I should not think the Government would be agreeable to this caviar making. (Servais).

Whitefish Bay. They get the caviar at all seasons. The eggs must be just ripe for caviar. This is so they will come loose from the phlegm or skin nicely. (Johnson).

STURGEON; COOKING.

Port Arthur. We used to cook sturgeon sometimes by parboiling it and frying it in the gravy afterwards, and it is not bad that way. (Marks).

BLACKFIN,
LONG JAW,
MENOMINEE WHITEFISH,
CISCO,
BLOATS.

BLACK FIN--LAKE SUPERIOR.

Port Arthur. Do not get any black fins here. (P.Trombley).

There is a fish caught here which has a black back and black fins, which are not very good for the market. We call them black fins. They are a whitefish, only they have darker fins and darker scales and back. (Servais & Beebe).

Marquette. They get the blue fin herring, called also the black fin. Here they call them the deep water herring. (A.Grant).

They do not get many of the blue or black fin herring. Get a few, but they do not amount to anything. They are much inferior in quality to the whitefish. Did not get the blue fin in Lake Huron when he fished there. He has had men fishing here with him and they say the blue fin are just the same

as in Lake Michigan, but they are not the same in quality. (J.Goodwin).

In the spring and fall the so-called blue fin comes in, and it is classed as a herring. Do not get many in shore. (A.Lorntzson).

Gets some blue fins in his gills in deep water at times. (N.Hanson).

Grand Marais, Michigan. One of the common market fishes taken off here. Inferior to the whitefish. (R.Connable, Jr.)

Whitefish Bay. Do not get the blue fin. (S.J.Johnson).

LONG JAW--LAKE SUPERIOR.

Port Arthur. The long jaw are deep water herring. None taken here. (P.Trombley, Port Arthur, Ontario).

Apostle Islands. 8 or 9 years ago the fishermen first began catching the long jaw; that it was small and believed to be a planted fish; that most of the fishermen about the islands found fault that such a fish should be planted in the lake; that the fishermen now believe that the fish is a native and almost as good as the regular whitefish. (Capt.Swannes).

Marquette. Do not get the long jaw here. (A.Grant).

They have the long jaw here also, but not any quantity of them. Only get them in deep water. When you go out to fish for siscowet you will get long jaws; and get those blue

fins in deep water also. Up at Ontonagon they used to get lots of those blue fins. It is quite a ways out there before you get deep water. There were any amount of the long jaws up there, but they could not use them. Could not sell them. They used to get a few long jaws in Lake Huron. Sometimes when lifting a gang here they might get 50 or 60 pounds of long jaws. They run smaller than the whitefish, but up at Ontonagon they get them weighing 3 pounds. The blue fins also run smaller than the whitefish. (J.Goodwin).

Grand Marais, Michigan. One of the common market fishes taken off here. Inferior to the whitefish. (R.Connable, Jr.)

MENOMINKE WHITEFISH--LAKE SUPERIOR.

Port Arthur. We get the menominee whitefish, but do not sell them. There is no market for them. Is not certain they are the menominee whitefish. They are a good deal like a whitefish, only they are broad at the back and have dark scales on them. (Servais & Beebe).

Bayfield, Wisconsin. Get very few menominee whitefish here. (M.B.Johnson).

Marquette. The menominee whitefish--called half breed here--are taken down in Grand Island Bay with hook and line. (A. Grant).

Whitefish Point. Never got any menominee whitefish and did not know what they were. (F.W.Roach).

A few are taken in the seines. (Endress).

They sell the menominee whitefish down in

Lake Michigan. (D.H.Pratt).

They get the menominee whitefish occasionally. Sometimes get a half dozen or a dozen menominee whitefish along in June. (Kimball).

Whitefish Bay. They do not get the menominee whitefish nor the blue fin. (S.J. Johnson).

CISCO--LAKE SUPERIOR.

West End. For the last 2 years there has been a kind of fish that has been a mystery to him. He calls them the cisco, and the last year or two in the 4 1/4-inch mesh would get as high as 600 or 700 pounds of big ones a day. In the herring nets do not get anything but herring and cisco. The ciscoes occur in the fall and all the season. (E.S. Smith, Duluth).

Minnesota. A specimen of *Coregonus*, called here cisco, taken in the gill net off Lester Park to-day, measured 14 inches long, 3 1/3 inches greatest depth, and weighed 19 1/2 ounces. Species not positively determined, but may be *labradoricus* or *nigripinnus*. (R.Rathbun, Duluth, July 2, 1894).

Off Lester River. Six cisco taken yesterday (July 4) from herring gill net set on

bottom. (S.Borgensen).

Off Lester River. Do not take many cisco right off here and they are caught only when the nets are set on the bottom. Take more of them nearer the city of Duluth, and also along the south shore of Lake Superior. This species is just beginning to appear at this season. They should be more abundant the last part of July, but they continue to take them only about a month. (S.Borgensen).

South Shore. Used to be taken in the pounds between Duluth and Sand Island. (J.E. Cooley).

Chequamegon Bay. In the fall they catch quite a few cisco. They commence fishing in the fall again sometime in September for cisco. Fish until the ice forms. The cisco are about the only fish they get here in the fall. They are smaller, and have coarser

meat than whitefish. The head is also more pointed, but is bigger than in the whitefish, and the eyes are larger. They are a cheap fish, but a little better than the Lake Superior herring. The cisco are handled just the same as whitefish. (S.E.Mathson).

Chequamegon Bay. Mr.Ashland changes his pound nets onto the west shore of the bay, somewhere up toward Washburn, for the purpose of catching cisco, beginning about this time (July 11) or a little later. Fishes there until it gets stormy. There are quite an abundance of cisco on the west side. The water is deeper there than on the south side. Has known them to catch cisco on the south shore, but they are very few. (Rathbun, Ashland).

BLOATS--LAKE SUPERIOR.

Port Arthur. We have a deep water herring here the same as they have on Lake Ontario; we call them bloaters here. They sent a lot up from Collingwood, and they were the same kind as we are catching right out here in 60 fathoms of water. These we catch here in the deep water are very fine eating. (P. Trombley).

Bloaters among the waste fishes taken in the gills, but good for food. (Trombley & Beebe).

Bloaters, from 3 to 6 inches, are taken in the gills. At one time the number of this small fry so taken was largely in excess of his usual catch, 15 or 20 to 1. Are frequently found in the stomachs of trout. (A. Murray).

Whitefish Point. Outside of the Point,

where the water is colder, they get a bloat only once in awhile in the gill nets. (Endress).

We catch the little bloats in the gill nets. (D.H.Pratt).

Whitefish Bay, July 25, 1894. The bloats occur in the deeper water, and also in the shoaler water near the deep.

The bloats are much more delicate than the whitefish and seem to have a much larger bladder. At any rate it swells up very much more, giving the front part of the belly a great bulge, and the larger share of the specimens were split through that region, forcing part of the bladder and often some of the viscera through. The specimens are, therefore, nearly all very much disfigured when they come up. (Rathbun).

BLOATS --- LAKE SUPERIOR.

Whitefish Bay.- Trip of Endress tug
E. M. B. A., July 25, 1894. Lifted 40 gill
nets. Bloats were taken as follows, but the
depths are only approximate: 14 fath., 1;
15 fath., 1; 16 fath., 1; 19 fath., 1; 19 to
25 fath., 1; 20 to 23 fath., 2; 23 to 60 fath.,
2; 30 fath., 1; 30 to 45 fath., 19; 35 to 40
fath., 6; 40 to 45 fath., 17; 60 to 70 fath.,
11; 70 to 75 fath., 20.-(Rathbun).

GRASS PIKE (LUCIUS),
MASKINONGE.

GRASS PIKE; ESCH--LAKE SUPERIOR.

Port Arthur. We do not find the pike in this lake. (Thos.Marks).

We never tried to save jackfish and do not know how they are. Never saw one put on ice, and do not know whether it would keep or not. They catch them here, however. (P. Trombley).

Is one of the waste fishes. (Trombley & Beebe).

Get a few grass pike in the pounds in October and during the summer. Do not sell them; but give away. (Servais & Beebe).

Isle Royale. Occur in Siscowet Lake. (S.P.Wires).

One of the market fishes brought to Duluth. A good many around the bays of Isle Royale. We call them shovel nose pickerel. (J.Coventry).

Bayfield. Do not get any grass pike or long nosed pike to speak of (Lucius). (M.B. Johnson).

Sand Island. Very rare about the island, but a few years ago were taken more toward the upper end of the lake. (F.W.Shaw).

Portage Entry. Used to be fished for at the mouth of the river and canal. (S.Quinn).

Marquette. Once in awhile get in the bay. (John Parker).

Very seldom get a long nosed pickerel in the pounds. (A.Grant).

Once in awhile get the long nosed pickerel in the pounds. (P.Anderson).

Whitefish Point. Have caught not to exceed half a dozen grass pike in the seines altogether. (John Clark).

There are lots of grass pike and they are still abundant about here. Down at Hay Lake and at West Neebish a party the other day

trolled and caught them as fast as they could haul them in. (F.W.Roach, Soo).

The grass pike has its headquarters in Taquamenon river. (Endress).

Do not get any grass pike up here. (Endress).

Taquamenon Bay. Around the mouth of Taquamenon river the nets catch a few grass pike, and around the mouth of Waiska river they catch a few also. (C.E.Ainsworth).

This species is handled at the Soo as a market fish. (C.E.Ainsworth).

Waiska Bay. Some are said to be taken in the pounds. (Rathbun).

Waiska River. Taken in a pound 1/4 mile above its mouth. (S.W.Kirvan).

The grass pike are very plenty on Hay Lake and West Neebish. (S.W.Kirvan).

MASKINONGE--LAKE SUPERIOR.

Port Arthur. Cannot tell the difference between a maskinonge and a big pike, except perhaps that one has the streaks crosswise and the other lengthwise. (Servais & Beebe, Port Arthur).

No one could tell us of the occurrence of this species in the main lake about Port Arthur.

Marquette. No maskinonge here. Never heard of one being caught in the lake. (A. Grant, John Parker).

Whitefish Point. Get no maskinonge in the seine. (John Clark).

The maskinonge are quite a scarce fish, but we used to get quite a good many 25 or 30 years ago. I caught a large maskinonge once in Lake Ontario; we had a pier built right out in the bay with an apron on it.

We carried on the business there for picker-el fishing, and used to catch quite a good many whitefish. This fellow we got upon this apron; and I used to think I was a pretty smart fellow when I was young; and I got my knees on his back; and two or three others got on him, and he made a spring and threw us off and jumped clear across the pier and went into the lake on the other side in spite of all we could do. There has been maskinonge caught down there that weighed 96 pounds, and I think this one weighed $1/3$ more than those. He was the biggest fish I ever saw in fresh water. (F.W. Roach).

Whitefish Point. They do not get the maskinonge here. (Endress).

Whitefish Bay. Never get any. (S.J. Johnson).

North Shore. They get a few maskinonge

in Goulais Bay, probably a dozen in a year, but they do not amount to anything. (J.Ganley).

Only catch an occasional maskinonge.
(C.E.Ainsworth).

Soo. One maskinonge was speared in the rapids here this summer. (S.W.Kirvan).

BROOK TROUT,
GRAYLING.

BROOK TROUT--LAKE SUPERIOR.

Port Arthur. Have any amount of speckled trout. We used to get quite a good many in the lake, but do not get so many now. Would get them in the gill nets and pound nets. Have seen them as large as 7 pounds here. (P.Trombley).

The speckled trout up in the creeks about here are up there all summer, and they cannot get down in the winter. These streams freeze to the bottom, and what becomes of the trout? People here claim they freeze up and come to life in the spring. They must get into deep holes somewhere. (P.Trombley).

They say they get the largest brook trout in Nipigon river they ever got before. There was one caught there the other day weighing 8 lbs.6 oz. (P.Trombley).

A few brook trout taken at almost every

lift of the pounds. (Trombley & Beebe).

Never sold any brook trout. (Servais & Beebe).

Occasionally a brook trout is caught in the pounds. (J.Brunson).

Brook trout are occasionally taken in the pounds. (John Maloney).

Portage Entry, Michigan. Occasionally a few brook trout are taken in the pounds. (S.Quinn).

Marquette. They get speckled trout here in the main lake around the rocks near the shore. They are abundant in some places, as inside of Grand Island. The sportsmen use the fly and angle worms for them. There have been men coming here for the last 25 years to fish for sport. They do not fish right in the bay here, but up the shore 4 or 5 miles. They get a good many of speckled trout in July and August. (John Parker).

Marquette. You can catch brook trout in Grand Island Bay, all through the bay, but principally on rocky places. Get them all through the open season, but mainly in July and August. Can catch them fishing through the ice also. They go up the river in September. They can fish in the streams from the first of May until September, but there is no regulation for the lake. Get them sometimes as large as 3 pounds in the lake. Have caught them in Grand Island Bay as high as 6 1/4 pounds dressed. In the brook trout they catch in the lake the red spots are a good deal larger than in those taken in the streams, and are not so bright. (A. Grant).

Brook trout are very abundant in the channel between Grand Island and the mainland and are fished for there extensively. They occur especially about rocky places there and elsewhere along the shore of the lake.

The State laws are said not to apply to them in the lake, but they are probably not a subject for international consideration. (Rathbun).

Whitefish Point. We have caught some large overgrown speckled trout that would weigh about 3 or 3 1/2 pounds. We catch them with the hooks just in front of the outlet. Some days they will come on the shore here and other days you could not get a bite. (John Clark).

Whitefish Point. Used to get lots of speckled trout in seines. I remember one man, a trader, who wanted me to put him up some speckled trout, and I put him up 2 barrels of speckled trout, and he paid me \$16 a barrel for them. Some of them would weigh 4 or 5 pounds. (F.W.Roach).

Whitefish Point. There is no sport fishing here. They have caught speckled trout

right off the dock here occasionally, and have caught them in the pound nets. Got one about a week or 10 days ago that weighed 4 1/2 pounds. The largest brook trout he has seen was at Bad Island. (Endress).

Mr.Wires, when he was at Alpena, and Mr. Frank Clark, wanted to get some wild brook trout, and they sent to Washington and got a seine; that was 3 years ago this summer; and they went up to Grand Marais and dragged the seine in Grand Marais lake; and Mr.Wires and Mr.Clark both told me that the trout they had in their ponds were too tame; were all white color; and they wanted to get something that had a little more life in it and stir the ones up they had and get a mixture. The first batch they got they lost the most of them as they did not have cans enough, but the next lot they got they saved nearly every one of them, and they were beauties. (Endress).

They do not get many speckled trout about here, perhaps half a dozen during a season. (Endress).

They got a speckled trout in the seine at the Point the other day weighing 4 pounds. Speckled trout sell for about 25 cents a pound. Do not get many speckled trout, however, just an odd one. (D.H.Pratt).

Once in awhile they will get speckled trout in the seines. (Kimball).

Whitefish Bay. Get a few odd speckled trout. Perhaps get one or two to a lift, and sometimes do not get any. They will run from one to three pounds. (S.J.Johnson).

Never heard any sportsmen complain of taking brook trout in their pound nets. (S.J. Johnson).

Whitefish Bay. Speckled trout are occasionally taken in their gill nets, especially on a shoal near where we were to-day, to

the westward of Parisian Island. (Rathbun, July 25, 1894).

Waiska River. No brook trout in the lower part, but are said to be, or to have been, abundant in the headwaters. (Rathbun).

St. Mary's River. But there are lots of these fellows fishing for speckled trout with gill nets and they are spoiling our speckled trout fishing. They set them in the streams around here. I was going down to my fish pond 3 years ago with a sail boat, and I ran in at Salt Point, and there is an Indian living there who lives by fishing, hunting, etc. He has a net that he calls a sucker net, and he sets it right out there on that rocky point, and that morning he had 7 great big speckled trout in it weighing from 1 to 3 pounds. And they are catching them all the time in that way, not only him, but others. They catch lots of them here in

the winter. The law relative to speckled trout applies to the inland waters, but not to the boundary waters, but the Indians about here have been made to believe that it did and they have scared them out a good deal.

Down this river (St.Mary's) there is some nice speckled trout fishing. There was a boy got one weighing 5 1/4 pounds down the river here the other day. I go down about twice when the season opens, down to Garden (?) river, and there is just one place where you can catch trout and that is the only place there is down there where you can catch them. The speckled trout have decreased very largely all about here. There is a stream on the south shore called Pendalls (Pendleton?) Creek; it was a sort of stopping place for us going up and down the coast, and in those days I could go there, and take a fish line and go out to that

creek and in 15 or 20 minutes catch all that 3 or 4 of us could eat, and now you can go there and fish all day, and perhaps you would get not more than a dozen small ones. Think it is Pendleton's Creek, southern shore of Whitefish Bay). (F.W.Roach).

St. Mary's River. They catch brook trout in the river. (C.E.Ainsworth).

They catch brook trout occasionally. Sometimes catch them weighing as much as 6 pounds. Can catch them out in the rapids (?) or down in the swift places in the river. They do not fish for lake trout for sport. In fishing for brook trout they use the fly principally. (C.E.Ainsworth).

Brook trout are quite abundant in many parts of the river, especially in the swift-er water. (R.Rathbun).

Catch brook trout on both sides of the river, but not out in the rougher water.

Said they were common along the outer side and at the ends of the island formed by the canal. There is not much fishery for them here. Do more above the railroad bridge than below it. All the fishing is for sport. They range in size up to 3 1/2 and 4 pounds, the larger sizes not very abundant. Use artificial flies and live minnows for bait. Thinks the open season is from May 1 to September 1. Go into the streams and still waters to spawn. (Wm.Bouche).

St.Mary's River. Their regulations (Canadian) for speckled trout apply to St.Mary's river. Their law is supposed to prohibit entirely the netting of speckled trout. (Elliott).

Soo. Practically there has been no hook and line fishing for commercial purposes on the American side, except for speckled trout, which they will catch for shipping. He can-

not do anything with a man who catches speckled trout in the Soo rapids because it is Government property, but if I got him on shore with the fish in his possession I could prosecute him, but cannot do anything with him when he is fishing. The rapids do not belong to the State of Michigan; they belong to the Government. Last winter he chased 25 people fishing in the close season. They would come out on a day that was so stormy you could not see your hand before you, thinking I would not be out, and I have chased lots of them. Chased one fellow over there last winter who caught them by the bagful and would sell them. His name was Bouche. I saw him one day drop in his line and haul out a lot of fish; then see if no one was looking, and drop them in his bag. When he saw me he started to run. I told him I would shoot him, but he did not stop.

and I chased him clear to the other end of the town, and that stopped his fishing for that winter. When he saw me coming he put the fish through a hole in the ice, so that I had no evidence any way. (S.W.Kirvan).

The following refers to the shallows on the Canadian side of the river, up at Gros Cap. That is a great place for speckled trout now, but after the speckled trout go away these lake trout come in on the reefs to spawn. The speckled trout are there now. They come in again just as soon as the lake trout go out, about the last of November, and the speckled trout come back and are in the river all winter and they catch them through the ice. They spawn in the main river. They continue there through the spring and all summer, and go out when the lake trout come in. (S.W.Kirvan).

He trolls for speckled trout above the

rapids, commences the first of May, and finishes up the first of September. (S.W.Kirvan).

Regulations, of course, hurt my business, but I would rather have it hurt my business, for it saves brook trout. The men that make the fish laws do not know anything about it. But the men that made the fish laws for the upper peninsula did not know when the season should be. Along about the 15th of August we catch about all female speckled trout and they are full of spawn. The season should close the 15th of August. Of course, I get five dollars a day for taking parties out until the season closes, but it should close just the same on the 15th of August. Does not understand why they have a close season for speckled trout in the winter. They have laid their spawn, and does not see why they should keep a close season. From the first

day of May until the 15th of August should be an open season; and then have it closed until the 15th of November, and then have it open until the 15th of August again.

The speckled trout are not near so abundant as they used to be. He has gone out in the Canada streams 8 years ago and caught 40 pounds and now could catch but about 15 pounds in a day. There is not much difference in the size. They get just as large fish in the rapids as they used to. Has caught them up the stream weighing 2 pounds, but never got any 4 or 5 pound ones up the streams. (S.W.Kirvan).

The laws now are generally respected here, but it used to be that they were not. There are an awful lot of ins and outs in regard to fishing. For instance, you cannot ship any speckled trout out of the State, and cannot catch any speckled trout under 6 inches

long. Sometimes there are fish brought in that are under size. Last summer he arrested a man on the street here who had 75 brook trout about 4 or 5 inches long. He catches lots and lots of these little trout when out fishing, but throws them back in again. He takes people out sometimes who want to keep them, but he tells them he will prosecute them if they take them ashore. They catch more speckled trout here in May than any other month. That is in the rapids. Catch more speckled trout in June than any other time. It is against the law for anybody to buy any speckled trout and it is against the law to sell them. He had Mr. Moses, of Cleveland, here the other day and he caught 59 in one day and they had them at the hotel for supper. If I suspicioned there were fish on the train being shipped out of the State, I could go up to the station and hold up the train. The Game Warden has the power to

seize and arrest anybody without a warrant.
(S.W.Kirvan).

North Shore. He took a party up last spring on the north (Canada) shore, and they caught 72 speckled trout weighing from 2 1/2 to 3 pounds apiece in 2 days. That was in Bachewauaung river. We left here on the 15th of August. (F.W.Roach, Soo).

North Shore, etc. There used to be plenty of speckled trout up there, but the streams are getting depleted, as they have been netting them up the rivers. He saw 2 speckled trout yesterday that were caught in a net, weighing about 3 1/2 pounds. Sometimes they get them in the pound nets. They come down out of the rivers. Sometimes they will get them in gill nets where they run them from the shore. But they are not catching many speckled trout up there now. (Elliott).

GRAYLING--LAKE SUPERIOR.

Grayling. While fishing up Root river last summer, on the Canadian shore, up near the Inland Lake, about 14 miles from the Soo, caught a fish that I never saw before; and I explained it to Judge Steere, and he said he had heard grayling were caught in that lake, but he had never seen any, and I explained the fish to him; and he said it was a grayling. (S.W.Kirvan).

YELLOW PERCH,

BLACK BASS,

ROCK BASS, &c.

WHITE BASS.

YELLOW PERCH--LAKE SUPERIOR.

Port Arthur. We do not find yellow perch in this lake. (Thos.Marks).

Yellow perch are very scarce, but get a few. Catch plenty of them in McKeller river here. (P.Trombley).

Isle Royale. Never saw a perch around the island. Never saw a perch caught in Lake Superior. (C.O.Flynn, Duluth).

Portage Entry. A few years ago the mouth of the river and canal was fished for perch with fyke nets, etc. (S.Quinn).

Marquette. No yellow perch here. (A.Grant).

Whitefish Point. Never recollect catching but one perch in the seine. (John Clark).

Whitefish Point. Do not get any perch here. (Endress).

Whitefish Bay. Do not get any yellow perch. Does not think yellow perch occur in

Whitefish Bay, but they come up in Taquamenon Bay. They get a great many of them there. Fix would get them in his pound nets. (S.J. Johnson).

St. Mary's River. There is fine perch fishing, and grass pike, and about 2 weeks from now the best fishing will commence at West Neebish. This is down the St. Mary's river. (F.W. Roach, Soo).

Canadian Soo. Saw 3 small yellow perch caught by boys with hooks, end of wharf. (Rathbun, July 21, 1894).

Waiska Bay. Many perch said to be taken in pounds; authority not a fisherman. (Rathbun).

Soo. Get some yellow perch on the sides of the river above and below the rapids, but not in them. (Wm. Bouche).

There are any amount of yellow perch. He took a party down on a yacht a week ago, and

they caught 500 yellow perch and were only out a couple of hours. There are none here at all compared to what there are down at West Neebish. The perch fishery is not near as good on Lake Superior as it is on Hay Lake. They get perch at Whitefish Bay, and get them right above the rapids here. (S.W. Kirvan).

North Shore. Do not get any of the yellow perch. (J.Ganley, C.E.Ainsworth).

North Shore. Do not know of their catching the yellow perch up there. (Elliott).

BLACK BASS--LAKE SUPERIOR.

Port Arthur. None are ever caught in the nets. (Trombley, Beebe, Murray, Brunson, Nuttall Bros., ~~Maloney~~).

Found in Loon Lake. (Nuttall Bros.)

We have no evidence that this species occurs in Lake Superior at Port Arthur or thereabouts. (Rathbun).

We do not find black bass in this lake. (Thos. Marks).

Never found any black bass in the lake here. They occur in the inland lakes, there being large ones in Loon Lake and Bass Lake. (P. Trombley).

Isle Royale. Never saw a black bass there. (C.O. Flynn).

Minnesota Shore. Take no black bass, to speak of, in gill nets. (S.P. Wires).

Off Lester River. Doesn't think there

are any black bass about here. (S.Borgensen).

West End. Do not have black bass here in Lake Superior. (J.E.Cooley).

Do not have any black bass in the lake about here. The water in this lake does not seem to be the style of water the black bass care for. (E.S.Smith).

Bayfield. Have no black bass around here. There are none in the main lake. (M.B.Johnson).

Bete Grise. Never caught black bass in pounds. Neither black bass or other game fish was taken at this place. (J.Croze).

Bete Grise. Has never caught black bass here. (A.Berriault).

Portage Entry. No black bass taken in the pounds. (S.Quinn).

Marquette. Never had the black bass here. (John Parker, A.Grant).

Whitefish Point. Would take no black bass in the seine. (John Clark).

East End. Never take any bass above the rapids except in Bachewauaung Bay, on the Canadian side, where there is a good place for bass. Never heard of one being caught on the south shore. Never caught one in all his fishing on Lake Superior for 9 years. (Roach).

Whitefish Point. Never saw a black bass up here. (Endress).

Black bass, where they occur, will gill like any other fish in the proper size mesh. In Georgian Bay has seen them lead along gill nets in the day time, and leaving the same out over night they would find very many gilled in the morning. The black bass where he used to live in Georgian Bay averaged from 2 1/2 to 3 1/2 pounds in weight. (P.Shaver).

Whitefish Bay. Never get any black bass.
(S.J.Johnson).

Taguamenon Bay. Mr.Fix states that he
caught 1 black bass in his pounds this spring,
the only one he has ever seen in that region.
(Rathbun).

St.Mary's River. At Neebish they get the
finest perch you ever saw, and they get the
black and rock bass. (F.W.Roach).

The speckled trout and the bass are the
only fishes that should be looked out for in
the river. At the mouth of this river at
Drummond Island, black bass commence to bite
in June. (F.W.Roach).

St.Mary's River. The pound nets in Lake
George take black bass. (S.P.Wires).

St.Mary's River. Black bass are caught
at some places below the Soo. (Richard Rath-
bun).

There are no black bass about the Soo.

Some are taken about 15 miles down from here in Charlotte river, and also about 25 miles down. Never saw any caught around here. (Wm.Bouche).

There is some black bass fishing at West Neebish and Sailor's Encampment, but since the new channel was put through at Sailor's Encampment they are not so plenty there.

Does not know exactly what the law is in regard to black bass, except that there is a season that you are not allowed to catch them only with the hook and line. Knows there are two species of black bass, but they do not get very many of the small mouthed bass on this side, but they get them on the Canadian shore around "Brusline" and down there. They are mostly all big mouthed bass on this side. (S.W.Kirvan).

North Shore. Get no black bass. (J.Ganley, C.E.Ainsworth).

North Shore and Georgian Bay. There are no black bass up there on the shore. There are any amount of black bass down in Georgian Bay, but has never heard of their catching any on the north shore of Lake Superior. (Elliott).

ROCK BASS, CALICO BASS, SUNFISH--

LAKE SUPERIOR.

Port Arthur. Take no rock bass about here. (Servais).

Take no calico bass about here. (Servais).

Take no sunfishes about here. (Servais).

Never saw any rock bass or calico bass here. (P.Trombley).

Whitefish Point. No rock bass here. (Endress).

St.Mary's River. There are places where there is some fishing for rock bass, but not many. St.Mary's River below the Soo. (F.W. Roach).

St.Mary's River. There are lots of sunfish down at Baytawasa and on Sugar Island. The sunfish is a sort of bass, and it has a little red spot on it. They are caught at

the mouth of Charlotte river and along Charlotte river, but never saw them up here. Thinks the water is too rapid for them up here. (S.W.Kirvan).

WHITE BASS--LAKE SUPERIOR.

Port Arthur. Never saw any white bass here. (P.Trombley).

Bayfield, Wisconsin. Do not get white bass. (M.B.Johnson).

Marquette. Do not have white bass. (A. Grant).

Whitefish Point. Have none here. (Enderess).

Soo. Do not have the white bass here. (S.W.Kirvan).

SUCKERS,

MULLET,

SHEEPSHEAD.

SUCKERS AND MULLET--LAKE SUPERIOR.

Port Arthur. We have suckers and mullet here. They are at the foot of the streams in the spring in abundance. (Thos.Marks).

Have any amount of suckers here and also have mullet. (P.Trombley).

One of the waste fishes of both the pounds and gills, but good for food.

Destroy quantities of the eggs of white-fish and trout. (Trombley & Beebe).

Get suckers in the pounds in October. Have an abundance of suckers and mullet. Sometimes get them weighing 2 1/2 or 3 pounds. Get any amount of suckers in the gill nets. (Servais & Beebe).

Suckers are among the waste fishes taken in the pounds. (J.Brunson).

Suckers are among the waste fishes taken in this region, and 3 kinds are recognized.

Feed upon the eggs of whitefish. (W.H. Davis).

Very few suckers are taken in the gills. (A.Murray).

Suckers, both the common and the large-finned, are among the waste fishes taken in the pounds. (Nuttall Bros.)

Suckers occasionally taken in the gills. A waste fish. Practically the only waste fishes taken in the gills. Taken in greatest abundance about last of July.

The most abundant waste fish is the sucker, although lawyers are not infrequent. There are three kinds of suckers. The black sucker, the big scaled sucker and the red horse sucker. (John Maloney).

BUFFALO.

Port Arthur. Get the buffalo, but are not abundant. Catch them only in the black

sturgeon. (P.Trombley).

Get a very few buffalo in the pounds in October. (Servais & Beebe).

Isle Royale. Catch a few suckers in the gill nets, but do nothing with them. The suckers that are caught are taken in the spring. (J.T.Johns).

Pound nets at Grand Portage, Minnesota.

Supposes they take a few suckers. (S.P. Wires).

West End. Also get a few suckers in the gills. Get any quantity of suckers if you get too close to shore. Have been selling some lately. The Jews handle them some. (E.S.Smith).

Off Lester River. A few red horse are taken in the gill nets. (S.Borgensen).

Wisconsin. Suckers are taken in the seines on the south shore. (E.S.Smith).

Bayfield. They get an abundance of suckers, but there is no sale for them. Last year he had about 200 packages put up, and has half of them yet. (M.B.Johnson).

Sand Island. A few suckers are taken in the pounds about here. (F.W.Shaw).

Predaceous. That he thinks the sucker is the greatest enemy of the whitefish and trout destroying more eggs than any other fish in the lake; that he knows this fish destroys more eggs than any fish because quantities of suckers gather on the spawning grounds as soon as the spawn is deposited and that he has found the eggs of this species in the stomachs of the sucker. (F.W.Shaw).

Apostle Islands. No waste fishes are taken in the pounds, except sometimes a few suckers. (James Smith).

Bayfield, etc. Also take some suckers in the pounds, but do not sell them. Cannot

get much for them. (J.La Belle).

Chequamegon Bay. They get a few suckers, some of which are salted and shipped away by the fishermen. (S.E.Mathson).

Bete Grise. Suckers eat whitefish spawn. (J.Crose).

Bete Grise. Occasionally caught in the pounds. Suckers eat whitefish eggs. Does not fish for suckers, although they are very plentiful; salted they are worth about \$2 a keg. (A.Berriault).

Keweenaw. A few suckers are about the only waste fishes taken in the gills. (Wm. Teddy).

Marquette. Get suckers in the pounds. Have black and yellow suckers. One has coarse, the other fine scales. (P.Anderson).

Marquette. Sometimes get 3 or 4 dozen or more mullet in the seines with the herring. Also take suckers. (A.Lorntzson).

In the herring gill nets take only suckers besides herring. (A.Lorntzson).

Gets suckers occasionally in his gill nets. (N.Hanson).

Grand Marais. Occasionally a catch of suckers taken in the gills. (R.Connable, Jr.)

Whitefish Point. In the early part of the season used often to get a lot of suckers in the pounds. The suckers used to gill and bother us a good deal. We could not dispose of them. They got suckers in September, but not as much as they did in the spring. (John Clark).

Another thing causes the decrease in the whitefish, a good deal; you will find suckers a good deal on the spawning grounds. You will find them in the shallow water. Sometimes in the fall towards Parisian Island you often get quite a haul of suckers in the

nets. Has noticed that suckers follow the whitefish during the spawning season and the shape of their mouth will allow them to consume the spawn. (John Clark).

In the month of May, if a man wanted to catch suckers, there are places where he could catch a thousand barrels of them. They have been a great nuisance to us; we used to have to roll them right out of the seine, and all about the same size; 25 or 30 barrels of them. (F.W.Roach, Soo).

There are lots of these what we call fresh water shad up here; have big scales. Some call them mullet, but I always called them fresh water shad. They are a pretty fish and a very good fish. They are a good deal better than the suckers. We get them down the river here, but not in the lake. (F.W. Roach).

Whitefish Point. Take the two common

suckers in the pounds. (Endress).

Whitefish Point. In the month of September, towards the latter part of the month, they get suckers very plenty occasionally here in the bay; would get a whole boat load of them; perhaps would get a couple of tons in one load of 4 or 5 tons. (Endress).

Some suckers are taken in the seines. (Endress).

They get a good many suckers and occasionally get a few mullet, but get lots of suckers. (Endress).

Whitefish Point. Get lots of suckers in the fall, about October. Two years ago got 10 tons in one lift of 1 pound. Get a few of them more or less all the time. He called the yellow ones the red horse (not the same as the red horse of Lake Erie), and the dark ones mullet. Thinks they come out from the rivers. Shell Drake river is full

of them. (P.Shaver).

They get some suckers in the seine. One season in particular, 5 or 6 years ago, they got 600 or 800 pounds of suckers at one haul. But that was when the whitefish were just about through, along the last of August or September. Sometimes when they are first hauling along in June they will get some suckers; maybe a dozen at a time. They get two kinds of suckers; one is a large scale and the other small scales. (Kimball).

Sometimes they get lots of suckers in the seines. (Kimball).

Whitefish Bay. Would get a great many suckers if he run his leads close in shore, but do not get them in the deep water. (S.J. Johnson).

One sucker was the only fish which I actually saw taken in the seine at Whitefish Point. (Rathbun).

Whitefish Bay. One sucker taken in a gang of about 5 miles gill net, July 25, 1894. (Rathbun).

Soo, Ontario. Saw 6 or 8 common suckers caught by boys with hooks from end of wharf. (Rathbun, July 21, 1894).

Waiska Bay. Many suckers are said to be taken in pounds; authority not reliable. (Rathbun). Also some small mullet.

Get a few suckers and mullet in the pounds. (C.E.Ainsworth).

They catch suckers and some such fishes as that, but throw them back into the lake. This is in pounds, North Shore. (C.E.Ainsworth).

Soo. Now and then a sucker is taken in the scoop. (Wm.Bouche).

The common suckers come up along the stiller water at the sides of the rapids in June to spawn. Sometimes very numerous

there. Catch very few of the red suckers about here. (Wm.Bouche).

St.Mary's River. Suckers are so plenty that a man can go out in the spring and fill 5 wagon loads of suckers in a day with a scoop net. They do not bite a hook readily. Have two kinds of suckers here, the red and white suckers. One has coarser scales than the other. They frequent the rapids in the swiftest currents. As a general rule suckers look for still water, but we have a lot of them in the swiftest water. The fish hawks will dive here after whitefish and suckers. (S.W.Kirvan).

There are quite a few mullets here. (Kirvan).

North Shore. Suckers are destructive to whitefish spawn. (J.Ganley).

They get suckers sometimes in abundance, but cannot sell them. Before the whitefish

come on the shores the suckers begin to get scarcer. (J.Ganley).

North Shore. In their nets they catch scarcely any waste fish. They get quite a number of suckers sometimes, but they always throw them back into the water, or take them ashore and leave them. They claim they eat the whitefish spawn. (Elliott).

SUCKERS PREDACEOUS---LAKE SUPERIOR.

Bete Grise.---Thinks that suckers eat whitefish spawn (Croze).

Bete Grise.---Suckers eat the eggs of the whitefish (Berriault).

SUCKERS EAT WHITEFISH SPAWN --- LAKE SUPERIOR.

Whitefish Point.- The beach becomes covered with suckers in November, which suck up all the spawn of the whitefish which come in close to the shore to spawn at that time.- (Shaver).

///.

SHEEPSHEAD--LAKE SUPERIOR.

Port Arthur. I do not think the sheepshead are here. (Thos.Marks).

I caught what they call a sheepshead in the bay a long time ago, and that is the only one I ever saw in Lake Superior. I was not certain whether it was a sheepshead or not, so picked his head open and there were two little stones in his head. He was a large one weighing 5 or 6 pounds. (P.Trombley).

There are no sheepshead about here. (Beebe).

Isle Royale. Never saw any sheepshead. (C.O.Flynn).

Bayfield, Wisconsin. Do not get sheepshead that he knows of. (M.B.Johnson).

Marquette. Do not have the sheepshead here. (John Parker, A.Grant).

Whitefish Point. Has never seen sheepshead here. (John Clark).

They have caught one sheepshead. They are tougher than whalebone. (Endress).

There are no sheepshead in this region. (C.E.Ainsworth).

Soo. Never saw any sheepshead. (S.W.Kirvan).

CAT-FISH,

BULLHEADS,

LING,

MOON-EYE,

GERMAN CARP,

LAMPREY,

BLOB.

CAT-FISH, BULLHEADS--LAKE SUPERIOR.

Port Arthur. Get an odd cat-fish here,
the same we get in Lake Huron. (P.Trombley).

Get no cat-fish to speak of. (Servais).

Two cat-fish are taken. (W.H.Davis).

A few cat-fish are taken in the pounds.

Are among the waste fishes. (Nuttall Bros.)

Never saw any bullheads in this country.
(Servais, P.Trombley).

Isle Royale. Do not get any cat-fish at
Isle Royale. (C.O.Flynn).

West End. Never get any cat-fish except
a few in the bay here. (J.E.Cooley).

Does not get any cat-fish to speak of in
the lake (in gill nets), but get a few in
the bay here. They would mesh in the gill
net occasionally, however. (E.S.Smith).

Wisconsin. A few cat-fish are taken in
the seines on the south shore. (E.S.Smith).

Bayfield. Has seen but one cat-fish this season. (M.B.Johnson).

Hardly ever get any cat-fish--got just one this year. (J.La Belle).

Marquette. No cat-fish here. (A.Grant).

Whitefish Point. Never caught a cat-fish in the seines. (John Clark).

There are no cat-fish here, either in the lake or river. I have heard that there was once in awhile one caught down in Mud Lake, but I never caught any. (F.W.Roach, Soo).

Whitefish Point. The only odd fish he has seen here were two cat-fish, that they have caught in 20 years. Caught them in the pound nets. (Endress).

Never get cat-fish here. (D.H.Pratt, Whitefish Point).

Whitefish Bay. Never get any. (S.J.Johnson).

North Shore. Get no cat-fish. (J.Ganley

and C.E.Ainsworth).

North Shore. They get a few cat-fish in Goulais Bay. Catch them in the pound nets sometimes. (Elliott).

Soo. Does not know what a cat-fish is like. Thinks there are none around here. (S.W.Kirvan).

There are no horned pout around here. (Kirvan).

LING--LAKE SUPERIOR.

Port Arthur. Get any amount of lawyers, too many in fact. They cannot give them away here, let alone selling them. (P.Trombley).

Lawyers are among the waste fishes, but are a choice food if the people only knew it. Taken in both gills and pounds. (Trombley & Beebe).

Get the lawyer in the pounds and in the gill nets. (Servais & Beebe).

A few lawyers are taken in the pounds. Classed among the waste fishes. (J.Brunson).

Ling are among the waste fishes taken in the pounds. (Nuttall Bros.)

Lawyers are among the waste fishes taken in this region. (W.H.Davis).

Lawyers are not infrequently taken in the pounds. Occasionally taken in gills. A

waste fish. (John Maloney).

Isle Royale. Once in awhile catch a lawyer (cusk), but do not sell them generally. But Capt.Smith caught a few and sold them to the Scandinavians here who seemed to think they were all right. (C.O.Flynn).

Isle Royale. Catch a few in the gill nets, but do nothing with them. (J.T.Johns).

West End. They get some lawyers (ling). Has seen as many as 50 pounds of them caught in some particular place, but as a rule they never took many. (J.E.Cooley, Duluth).

Takes a few lawyers in his trout nets. The lawyers are a good fish. He has been selling some this year. For his own use would just as soon have them as to have trout. (E.S.Smith, Duluth).

Off Lester River. A few lawyers are taken in the gill nets off here. (S.Borgensen).

Wisconsin. Lawyers are taken in the seines on the south shore. (E.S.Smith).

Bayfield. Get some lawyers (cusk) in the winter, caught with the hook, and get a few in the pound nets. They are unsalable. (M.B.Johnson).

Catch some lawyers with the trout in bobbing through the ice. (I.Chafe).

Bete Grise. Occasionally taken in the pounds. (A.Berriault).

Marquette. They get lawyers (cusk) if they set on mud. Lawyers occur mostly on mud bottom. They do nothing with them, however. The Frenchmen here eat them. (John Parker).

Marquette. Get some lawyers in the winter. They catch a few fish here with set lines, close by here, and they generally find a lawyer on their hooks in the winter. They fish out perhaps 1 1/2 miles then. (A. Grant).

Marquette. Get an occasional lawyer in the seines. Have taken them in 16 feet of water.

He has eaten the lawyer and it tastes very much like dried codfish. Some people here will eat it, but others do not want to have anything to do with it. The English (Americans) here will not have it at all, but the Swedes like it. He takes so few of this species that he does not try to work up a trade for them. It would be very easy to do so, however, if he obtained a sufficient quantity to warrant it. There was a fisherman here named P.Nelson, who fished with hook and line, and would obtain quite a quantity; he worked up customers for them and would receive 4 cents a pound for them early in the spring. In midsummer it is not much use to take them because they get too soft. (A.Lorntzson).

Get a few lawyers on the hooks with the trout, but no other outside species up to the present has been taken. (A.Lorntzson).

Marquette. Gets the lawyers occasionally in his gill nets. (N.Hanson).

Whitefish Point. Very seldom get lawyers in the seine, as they are a deep water fish. (John Clark).

They catch the ling here in this river through the ice towards spring. The half breeds use them. I think they are the fattest fish there are, especially the livers. Never used to catch them in Lake Superior. In all my fishing at Whitefish Point, I do not remember of ever catching a ling. About the sickest I ever was in my life was when lifting nets, and about every other mesh had a dead ling in it, and they were all swollen up, and we had to let the air out of them before we could get them out; and we worked

all one afternoon taking them out. This was in Lake Ontario. (F.W.Roach, Soo).

Whitefish Point. They get lawyers here occasionally in the pound nets and get once in awhile one in the gill nets, but not very often. Might get perhaps one at a lift in the pound nets. They have a great big liver, as big as my hand. When the liver is fried it tastes just like fried oysters. They have no sale for them. Sometimes in the spring, before the ice moves out, they drop a piece of netting along-side the dock and get suckers and lawyers. One spring he fried a lawyer, but it was too rich for him to eat. (Endress).

They get a few ling or lawyers here. (D.H.Pratt).

Once in a great while they will get a lawyer in the seine. (Kimball).

Whitefish Bay. They get a fish called

the lawyer or ling. Do not get a great many, however. (S.J.Johnson).

North Shore. Get a few lawyers in the gill nets sometimes, and in Bachewausung Bay they get a few in the pounds, but none to speak of. (J.Ganley).

Only a few lawyers in this region. (C.E. Ainsworth, Soo).

Soo. There are odd lawyers taken here occasionally in the river at the foot of the rapids, but they are not plenty. (S.W.Kirvan).

MOON-EYE--LAKE SUPERIOR.

Port Arthur. Get the moon-eye here, but
only a few. (Servais & Beebe).

GERMAN CARP--LAKE SUPERIOR.

Soo. They have no German carp here in St.
Mary's river. (S.W.Kirvan).

Heard of no German carp on Lake Superior.
(Rathbun).

LAMPREYS--ST.MARY'S RIVER.

There are lamprey eels taken here. There was one speared here and you can get a photograph of it in Coke & Yates (?) gallery. It was speared underneath the electric light plant. It was from 3 to 5 feet long. He catches lamprey eels when he is catching cawcawtooshes, but they run right through his nets. He thinks they kill lots of fish. (S.W.Kirvan).

BLOB--ST.MARY'S RIVER.

He has cawcawtoosh that are better for bait than whitefish. They look a good deal like a lizard, but they are a genuine fish. They do not grow to be over 3 inches long, and are all head. They occur around the rocks on the bottom, and the speckled trout live on them in the rapids. (Blot or Miller's thumb?). (S.W.Kirvan).

LAWS IN FORCE.

Laws in Force.

LAKE SUPERIOR.

MINNESOTA.*Close season*Trout, close season, Oct. 1 to Apr. 1.*No close season*

Whitefish, lake trout, lake herring, sturgeon, pickerel, and any variety of pike except wall-eyed pike, may be taken in all international waters at any time.

Close season

Wall-eyed pike and all other food fishes except those enumerated above, close season, Dec. 1 to April 15.

Gill net mesh.

Whitefish, lake trout, sturgeon, pike and pickerel may be taken in international waters with nets the meshes of which measure not less than $3\frac{1}{2}$ inches extension.

Gill net mesh

Lake herring may be taken in international waters with nets the meshes of which measure not less than $2\frac{1}{2}$ in-

ches extension.

Spears,

Suckers and buffalo fish may be speared during April and May.

*Minnow
nets.*

Minnows for bait may be taken with nets in waters not inhabited by trout.

Hooks.

Except as provided in the last four paragraphs above, fishing shall be carried on only by hook and line ~~in~~ held in the hand or attached to a rod.

*Explosives,
etc.*

Use of explosives, poisons, etc. illegal.

Set lines

Use of any set or trot line, or any wire, string, rope or cable having attached more than one hook, illegal.

*7. minimum
sizes*

Whitefish, minimum legal size, 6 inches.

Wall-eyed pike, ditto.

Trout, ditto.

Bass(except rock bass) ditto.

*Wanton
destruction*

Illegal to wantonly waste or destroy any fish mentioned in this act.(Catching

--3--

of more than 50 fish excepting whitefish, lake trout, lake herring, sturgeon, pickerel, and any variety of pike, except wall-eyed pike, caught in international waters, by any one person in any one day shall be deemed a wanton destruction, etc.).

*Sawdust,
etc.*

Illegal to deposit any sawdust or other refuse from a portable saw mill in waters where fish have been artificially planted or where trout abound.

(The foregoing regulations are all contained in act of April 21, 1893).

*Near mouth
of rivers.*

Illegal to put any nets, seines, hooks or other device for catching fish, or any substance injurious to fish, in the waters of Lake Superior, within 1,000 yards from the mouth of any stream flowing into said lake, or so as to prevent the free passage of fish to the mouth of said stream(1887).

--4--

Illegal to place any fish or fish spawn,
other than trout, in the waters of
Lake Superior, within 500 yards of
the mouth of any stream flowing into
said lake(1837).

Whitefish, minnow local size, 1 1/2 lbs.
brockfish, 1 lb. dressed
any person not exceeding 50 lbs. or
less size.

Wall-eyed pike, minnow local size, 1 lb.

Black bass, 4 lbs.

Perch bass, 4 lbs.

Lake trout. Fishermen shall fertilize
eggs of ripe fish taken between Oct.
20 and Nov. 1, and return eggs to
valer.

Whitefish, same, between Nov. 1 and 20.

Planting of
fish

Special
fish

Minimum
size

Fishermen
shall
return

LAKE SUPERIOR.

Wisconsin.

Use of explosives and spears illegal.

*Explosives
Spears*

Whitefish, minimum legal size, 1¹/₂ lbs.
undressed, 1 lb. dressed (Fishermen
may possess not exceeding 50 lbs. of
less size).

*Minimum
Size*

Wall-eyed pike, minimum legal size, 1 lb.

Black bass, ditto.

Frog bass, ditto.

Lake trout. Fishermen shall fertilize
eggs of ripe fish taken between Oct.
20 and Nov. 1, and return eggs to
water.

*Fishermen
returning
spawn*

Whitefish, same, between Nov. 1 and 25.

LAKE SUPERIOR. *and St. Mary's River,*Michigan.

~~Use of pound, trap, stake, gill or set
nets or seines or like device of any
kind prohibited in Saginaw Bay, and
within 1 mile from Duck Range Light,
from April 1 to Nov. 1.~~

Sweep nets shall not be over 150 fathoms
long.

Seines to be drawn upon shore only, or to
a dock to which one end is fastened.
Drifting by seines or drag nets il-
legal.

Pound nets to be so set that the bars
forming the meshes shall be in
straight lines running at an angle
of 45° to the horizon.

Meshes of nets, minimum legal size, exten-
sion measure: Pounds or traps, 5 in-

*Sweep
nets.*

Seines

*Pounds,
direction of
meshes.*

*Pounds,
size of mesh.*

ches in lead, funnel and heart; $3\frac{1}{2}$ inches
in crib.

Pounds,
Size of mesh.

Pounds for perch, herring and pickerel
only, $2\frac{1}{2}$ inches in crib.

Gills,
mesh.

Gill nets, $4\frac{1}{4}$ inches.

Gill nets for perch, herring, black fins
and long jaws only, $2\frac{3}{4}$ inches.

Seines,
mesh.

Seines, $3\frac{1}{2}$ inches.

Shingling

Diverting natural progress of whitefish
by shingling or otherwise frighten-
ing them illegal.

~~Obstructing free passage of fish by any
device across any stream, lake or
river illegal.~~

Explosives,
Poisons.

Use of explosives and poisons illegal.

Close
season

White fish, close season, Nov. 20 to
March 1.

Close season

Muskallonge, from March 1 to July 1, can
be taken only with hook and line.

Black bass, ditto.

Strawberry bass, ditto.

Green bass, ditto.

White bass, ditto.

Minnows

Minnows or small fry fish can be taken
only for bait.

~~Perch, minimum legal size (in Saginaw Bay)~~

~~4 ounces.~~

~~Cuckers and mullets, minimum legal size,~~

~~12 ounces (in Saginaw Bay).~~

Salmon Treaty.

ONTARIO---ALL WATERS.

Whitefish.

Gill nets shall have meshes of at least 5
Close season, Nov. 1 to 30(1889; in force
in 1894).

Shall not be taken by any kind of seine
between May 13 and Aug. 13(1886; may
not be in force now).

The fry shall not be destroyed at any
time(1886).

Gill nets shall have meshes of at least 5
inches extension; shall not be set
within 2 miles of any seining ground
(1886; may have been changed since
then).

Seines shall have meshes of not less than
4 inches extension(1886; may have
been changed since then).

Boats or other apparatus can be used only
under license.

The size of the mesh is prescribed with
reference to different kinds of

Salmon Trout.

Close season, Nov. 1 to 30(1889, in force 1894).

Gill nets shall have meshes of at least 5 inches extension; shall not be set within 2 miles of any seining ground (1886; has probably been changed since then).

Bass, close season, May 10 to June 30(1894).

Maskinonge, close season, April 15 to June 15(1889, in force 1894).

Dore, close season, April 15 to May 15, (1889; in force 1894).

Speckled trout, close season, Sept. 15 to May 1(1889; in force 1894).

Nets or other apparatus can be used only under license.

The size of the mesh is prescribed with reference to different kinds of

fishes.

Use of snares of any kind is prohibited.

Unlawful to fish within any fishery limit described in any lease or license, except by permission of the occupant under said lease or license; does not prevent angling for other purposes than those for trade and commerce(1886, 14).

Seines, nets or other fishing appliances shall not be set so as to obstruct navigation by boats and vessels; and the latter shall not wantonly injure apparatus lawfully set(1886,14).

Every person using stakes or other timber for fishing purposes shall remove them within 48 hours after ceasing to use them, and always at the expiration of the fishing season(1886 14).

The main channel of any river shall not

be obstructed by fishing apparatus
(1886,14).

No device shall be so used as entirely to
obstruct the passage of fish.....
or to prevent their passage to and
from accustomed resorts for spawning
and increasing their species(1886,
14).

Unlawful to use spears, grapnel hooks,
negog, or nishagans for taking salm-
on, trout or lunge of any kind, mask-
inonge, winaniche, bass, barfish,
pickerel, whitefish, herring or shad;
special license may be granted to
Indians in some places(1886,14).

Unlawful to take or possess the young of
any fish mentioned in this act, or
in any regulation under it(1886, 14).

Fishery officers may determine or pre-
scribe the distance between each and
every fishery(1886,14).

From 6 P.M., Saturday, to 6 A. M., Monday following, seines, nets or other apparatus shall be so raised or adapted as to admit of the free passage of fish through by, or out of the same, and during such close time no one shall take fish by such means (1886, 14).

Unlawful to throw ballast, coal ashes, offal, on or in the neighborhood of fishing grounds, etc.(1886, 15).

Unlawful to throw or to allow to pass into the waters frequented by the kinds of fish mentioned in this act, deleterious substances, saw dust, mill refuse, etc. The Minister of Marine and Fisheries may make exceptions(1886, 15).

Use of explosives prohibited.

REGULATIONS SUGGESTED.

CLOSE SEASON -- LAKE SUPERIOR. 1894

A close season during the fall spawning period on the American side of the Great Lakes would freeze the pound net fishermen out entirely.--(Wires).

Duluth.-- Thinks the November close season observed in Canada more of a protection than the hatching work. Mr. Coventry would have a close season in the fall for whitefish and trout when spawning. In Canada the close season creates a large supply of whitefish every year. Thinks that in Thunder Bay they catch more fish per net than they used to.--(Coventry).

Thinks there is no reason for a close season. Would do far more good to fish through the spawning season and save the eggs and have them hatched.--(E. S. Smith).

If a close season were enforced it would help out considerable towards restoring the fish.--(Flynn).

The only way he can see would be to protect the fish for a certain number of years;

give them a chance to multiply. If you allow them to fish in season, they will fish out of season. There are lots of Canadians fish during the close season, using no buoys to their nets.--(Flynn).

Bayfield.-- Hardly thinks a close season would do any good. A close season should be in the spawning season, but does not know that it would do any good even then. Never took much stock in a close season.--(Johnson).

Sand Island.-- The surest and best protection would be a closed season in November. Would advocate a closed season in November for whitefish, but this would not protect the trout.(Shaw).

Bayfield.-- If the Government wants to protect the fish let them stop fishing when they are spawning.--(LaBelle).

Houghton.-- Believes in a closed season for all parties during the time of spawning.--(Croze).

Keweenaw.-- Would not advocate a closed season at any time of the year. Would allow any man to put in as much time as he finds profitable.--(Teddy).

Bete Grise.- Although he does not believe this region requires protection thinks that fish should not be taken during the spawning season, and that a closed season would be of benefit and the best thing for all parties.- (Berriault).

Portage Entry.- Does not see that there is any particular demand for a close season at present, since there is but little fishing going on while the fish are spawning. Instead of a closed season Mr. Quinn thinks that a closed year, all over the lakes, or on certain parts at a time, would be preferable. Stopping all fishermen whatever, one year out of five. This, however, might be detrimental to a great many poor families, who live, from year to year, on the fish caught, and might not be the best regulation.-(Quinn).

Grand Marais.- Believes if a law were enforced, prohibiting the catching of fish below a certain size, it would be unnecessary to have a close season. That the fish up to the spawning age would be unmolested. That the spawning season is very late, and but

little fishing is done in Lake Superior, specially the northern part, while the fish are on the spawning grounds.--(Connable).

Marquette.-- Would have a close season during the spawning time of the trout and whitefish. They will have to come to it some time, sooner or later.--(Grant).

Does not think a close season would be of much use on this lake.--(Goodwin).

It would be a little severe to stop the fishing during the spawning season in November.--(Hanson).

Whitefish Point.-- Would not have a close season around this shore, for nature arranges that. Does not think a close season would benefit the fisheries any.--(Clarke).

Is in favor of a close season. Should begin about November first and continue until April first. They get no fish here through the ice, but lake trout.--(Endress).

Does not think a close season would have much effect on them here. Wherever there is a spawning ground he thinks a close season

would be the best thing they could get. Cannot keep up the supply of fish by hatching alone. A close season might not make any difference one way or the other. The only way he sees to cover it is to have a close season along the entire shore, then none of them would kick.--(Pratt).

Thinks a close season does not help the trout at all, and it is only during the last 2 or 3 years that they have paid any attention to enforcing the Canadian laws in this region at all. They have run tons of fish down from the Canadian shore every year in November, until within the last 2 or 3 years. Three years ago last fall, there were tons and tons of fish came down here from Parisian Island and along the Sandy Island and Maple Island and from Goulais Bay in November.--Roach).

The way I would protect the fish I would stop pound nets or gill nets being set in the fall in shallow water wherever fish spawn. The fishermen know where they spawn. I would not stop gill net fishing out in deep water, for the fish do not spawn there, but would

stop shallow water fishing altogether in the fall and thus protect the spawning grounds during the spawning season.--(Roach).

There ought to be a close season, fishing should stop on both sides from October 1 to 20 and again from first to 15 or 20 of November. If you would do that you would save the fish. Then go where these good spawning grounds are and let your men catch the fish just for the eggs and nothing else.--(Roach).

Whitefish Bay.-- Does not believe in a close season but does in hatcheries.--(Johnson).

North Shore.-- As far as a close season is concerned, the close season they have in Canada today only protects the shoal trout and shoal whitefish. It does ^{not} protect any of the deepwater fish because they do not spawn at that time. While there is probably some protection to those fish from having a close season, there is a larger loss by not having a hatchery. They begin to get the large whitefish about November 20 and they are done spawning about the last of November. The small whitefish start to spawn about

December 20, and they will probably be done about the first of January. There is another run of whitefish that spawn in January in Goulais Bay. The Indians catch them through the ice and bring them down here and they have spawn in them. The close season protects the whitefish in Lake Superior only to the extent of about five per cent. Would be well to have a close season beginning about November 15 and extending to the first of February. Up to November 15 on the Canadian shore and this shore there are no fish spawning that he knows of, with the exception of shallow water trout. Shore trout begin to spawn here about September 25. Thinks there should be a separate close season for each lake.--(Ganley).

The close season does not amount to much at this end of Lake Superior because the weather necessitates a close season. He illustrated this fact by referring to their attempted fishing the previous November on the North shore, for the purpose of proving the time of spawning of large whitefish, in

consequence of which they suffered great loss on account of storms. He believes in a November close season. From November 15 would protect whitefish in Lake Superior. Thinks they should have a month's close season from that date. No fishing is done through the ice in Whitefish Bay. Thinks the Canadian close season begins too early.--(Ainsworth).

East End.-- He would have a close season to cover the spawning period of whitefish, which varies in different localities. No money is made in the late fall fishery in the western end of Lake Superior, and it would be no hardship to give it up.--(Coates).

Could not have a close season just on the fishing grounds and not in the other places, as you could not protect it. The Canadians do not want a close season unless the Americans have one. The fishermen say they would be willing to pay double the amount of license if hatcheries were given them. They say "Give us hatcheries and we will continue to observe the close season also for a few years, and then if the fisheries will keep up without

a close season, do without it".-(Elliott).

Port Arthur.- Would establish hatcheries and remove the close season.-(Trombley).

Might make the close season a little earlier in the fall and not so late in November. You might change the close season a little between the north and south shores.-(Marks).

If no hatcheries are put in I would suggest leaving the grounds that fish are liable to breed on rest for a few years.-(Servais).

There should be a close season, but it should be at the right time. This is the sense of the fishermen.-(Davis).

Would recommend that the close season would be done away with and the money expended in looking after offenders be applied to the establishment of fish hatcheries. Might have a close season with reference to seines.-(Murray).

The closed season, if retained should be placed at the proper time. Think it should be retained if this is the only way of preserving the fish.-(Nuttall Bros).

The closed season is not at the proper time, should be from October 20 to November 10. Believes in a close season but would have it for all kinds of nets at the same time.--(Maloney).

CLOSE SEASON -- LAKE SUPERIOR.

Port Arthur.-- In the Inter-national Fisheries conference, held two years ago, there was a very general opinion that there should be a close season and to have hatcheries in every State. They spoke very much in favor of the United States trying to observe the close season and wanted to know why they couldn't do it if we could.--(Marks).

CLOSE SEASON LAW EVADED AT DETOUR.

The Canadians fish along there also. He has collected any amount of whitefish eggs from the Canadians about Detour Passage during the close season. Different American firms have handled altogether from 1 to 10 tons of Canadian fish during the close season of a single year. There is a good deal of illegal fishing going on from Canada that the authorities do not know of, and it is said that the over-seer at Detour is in a measure cognizant of the fact.-(Wires).

EFFECTS OF FALL CLOSE SEASON---LAKE SUPERIOR.

Bayfield.---If there were such a law as they have in Canada the fall fishing would not amount to much, but it would increase the spring fishing. If they would prohibit fishing on the American shore at the right time to save the spawning fish there would be no use of fishing in the fall at all because that is the time when they catch most of their fish (Chafe).

PROHIBITING OR RESTRICTING AMOUNT OF APPARATUS.

LAKE SUPERIOR.

Duluth.- Does not think it would do to regulate the number of nets.--(Cooley).

Might restrict a part of the nets and that would be a very good way of regulating the matter.--(Flynn).

Bayfield.- Last winter the Booth Co. worked hard to have pound net fishing prohibited along the main shore of Wisconsin for the period of five years in order to protect the small fish, as well as themselves and the fishermen. No action was taken by the Legislature. If you could prohibit seines and pound nets along the main shore for five years it would give the small fish a chance to grow and to spawn. That, taken in connection with the good work the Duluth hatchery is doing, the lake should be replenished again and we should have good fishing.--(Johnson).

Seining should be prohibited.--(Johnson).

Seine fishing should be prohibited entire-

ly.--(Chafe).

Apostle Islands.-- No restrictions should be made in the use of gill nets.

Sand Island.-- Would not prohibit the use of any apparatus now in operation on the lake.--(Shaw).

Sees no reason why strings of pounds nets should be limited in length, nor the number limited which each fisherman is allowed to operate.--(Shaw).

Houghton.-- Would prohibit no apparatus now in use. Would not limit the number of pounds nets in a string, as long as it did not interfere with navigation, and would allow any man to fish as many pounds and gills as he chose.--(Croze).

Keweenaw.-- Would not restrict any one from using gill nets, but believes that if anything is reduced it should be the number of pound nets, to which he is not so favorably inclined, but would not prohibit any kind of apparatus.--(Teddy).

Portage Entry.-- Would prohibit spear fishing.--(Quinn).

Would limit or restrict in some way the number of pound nets since their rapid growth is becoming somewhat threatening to the supply of fish.--(Quinn).

Grand Marais.-- Would prohibit no kind of apparatus unless it were a small meshed seine. Would let every man fish as many pounds in a string as he desired, but it would be better if the latter did not come to near the shore.--(Connable).

Whitefish Point.-- Does not think much of seines. They get too many small fish.--(Endress).

Would have no measure for limiting the amount of gill netting. There may be places on some of the lakes were they should have it, but there is no cause for it here.--(Endress).

When we had this ground here entirely to ourselves we never overdid the business. Years ago we might have caught more fish than we did, but we tried to preserve it and make it last a long time, when the Booth people came here we had to go in for our share.--(Endress).

Whitefish Bay.- Wouldsay it was all right for the tugs to fish as they chose. Does not know as the amount of gill netting in the lake should be limited.--(Johnson).

North Shore.-- Thinks that each man should be allowed 10 or 12 pound nets, as it was on the Canada shore of Lake Superior until this year. You put in the number and may be only 1 or 2 of them will fish. It is the same with gill nets where you will find that only one or two gangs will take fish.--(Ganley).

In regard to gill nets a fishing boat should not be restricted in the amount of nets they use, for the reason that you might set six miles of nets and there might be only one or two miles that would catch any fish. You might get fish in one net and not in another. The whitefish and trout bunch in the nets. A gill net boat or a tug should not be restricted to any number of nets because twine is very dear and people owning tugs will put no more twine in than their men can handle. In Canada they allow the sail boats 6,000 yards and tugs 12,000 yards.

That plan was gotten up 20 years ago. With

our boats now 6,000 yards would not be much more than one gang.--(Ganley).

Port Arthur.-- Would prohibit no apparatus that is fished now. Would not limit the number of pounds in a string, since it is in many cases better for a fisherman, even if he took no more fish. It lengthens the season for catching and is more convenient in setting and lifting.--(Trombley).

Would limit the amount of apparatus a man could own and fish. Allow each man as much as he, with 2 or 3 assistants can operate. This would tend to prevent monopoly.--(Trombley).

If they want fish for future generations license less nets. The only way I think is to restrict the fishing as much as you can and take the chances on it. I think I would limit the nets to a certain extent, and would not allow them to be nearer than 2 miles apart. They are now putting them 1/2 mile apart.--(Marks).

The best system is to limit the number of nets. Would limit the number of gill nets

as well as pounds. It is not right that any one man or company should monopolize the whole business.--(Servais).

Would limit the amount of apparatus per man to prevent a monopoly. Would do this by not allowing a man to take too many leases.--(Davis).

Would not restrict the use of gill nets but would do away with pound net fishing, as too many small fish are caught by this method.--(Murray).

Would not limit the number of pound nets in a string and would allow each person to fish as many pounds and gill nets as he could attend to.--(Nuttall).

Would not prohibit any kind of apparatus entirely, nor restrict one kind more than another. Would let every man fish as many nets as he could attend and as many as he found profitable.--(Maloney).

PROHIBITION ON APPARATUS - LAKE SUPERIOR.

Port Arthur.- Would not prohibit any
kind of apparatus now in use.-(W. H. Davis).

RESTRICTING APPARATUS -- LAKE SUPERIOR.

Marquette.-- The only thing he can see in this lake would be to stop tugs from fishing. They are very destructive to fish on this lake without doubt.--(Goodwin).

POUND NETS--LAKE SUPERIOR.

1894.

PROPOSED LEGISLATION.

APOSTLE ISLANDS AND ADJACENT MAINLAND, .

WISCONSIN.

Joseph La Belle, Bayfield.--- Two years ago, there was a bill presented by all those big fish dealers in Wisconsin, to stop the pound net fishing altogether, and when they found they could not do it, they made up a bill not to have any pound nets set within a mile of the shore. This applies only to the mainland.

REGULATIONS; RESTRICTIONS ON GROUNDS---LAKE
SUPERIOR.

Port Arthur.---Each steamer is confined within a radius of 5 miles, and is not allowed to fish outside without violating the law. This is a good law and he does not believe every man should have a right to fish where he pleased (Brunson).

RESTRICT SIZE OF MESH OR RELEASE YOUNG FISH.

LAKE SUPERIOR.

Duluth.- Gill nets were regulated by law so that they did not catch the small fish.- (Cooley).

Thinks it would be a good thing to regulate the size of mesh in the pots of pounds.- (Cooley).

Bayfield.- Thinks it would be a good thing to prohibit the fishermen landing whitefish under 1 1/4 lbs. He does not take enough small trout to amount to anything.- (Johnson).

With the gill nets and pound nets he would have the mesh regulated.- (Johnson).

Give the pound nets a particular mesh and the small fish would have a chance. If you take the smallfish with other fish you are bound to bring them ashore.- (Chafe).

Sand Island.- Would advocate turning loose all small fish taken in the pounds. They can be taken from the pot by means of dip nets and released uninjured. The size of

mesh is about right.--(Shaw).

Houghton.-- Does not believe it right to take number 2 fish at all. Would prohibit the sale of such fish in the market. This, of course, would necessitate throwing out the small fish when caught, which most of the fishermen would do so as to preserve the life of the fish.--(Croze).

Keweenaw.-- Thinks the size of the mesh is as large as could be made to allow the fishermen any profit. Believes that no fish are taken but what can be used in some way by the fishermen.--(Teddy).

Bete Grise.-- Would advocate throwing the smallest fishes out of the pound nets into the water with a dip net; does not think it would injure the fish.--(Berriault).

Portage Entry.-- Thinks the mesh is possibly about right, but would advocate throwing out or turning loose young fish. This could be done without handling the fish at all.--(Quinn).

Grand Marais.-- It should be made punishable by law for anyone to sell fish below a

certain size. Is not in favor of increasing size of mesh. Would advocate lowering one side of the pound net to allow the small fish to escape; but this would be unnecessary if the market were taken away for small fish.- (Connable).

Marquette.- Thinks the mesh is all right now. Throwing fish out of the gill nets does not amount to anything, because $2/3$ of the fish are gone before they are taken out. It would be a good thing to do so with the pound nets. There is an illegal size of fish here, regulated by State law, but no one pretends to obey it.--(Grant).

Whitefish Point.- Is in favor of putting a restriction on the size of mesh and seeing it properly enforced. Thinks that would be better than a close season. Approves of their restrictions as to size of mesh on the Canada shore.--(Clark).

Believes in having a mesh defined for the pots. Thinks $3\frac{1}{2}$ inch mesh is large enough as it allows large enough fish to escape. Does not think it advisable to throw out small

fish from the pounds because they will generally die .-(Endress).

Thinks the mesh should be regulated, although they have it regulated now if they would live up to it. A fish weighing 1 lb. dressed, ought to go through a 3 1/2 inch pound net mesh.-(Roach).

North Shore.- Would regulate the size of the mesh in pounds and gill nets. Does not think it would be any use to have a regulation to throw out undersize fish, because they do not take enough of them. The way to do it is by regulating the mesh. If you go to work throwing out undersize fish, after you have handled them, only about 1/4 would live. There is no use having hatcheries and planting fish unless you regulate the size of mesh so as to allow them to come to maturity. If you regulate the size of the mesh you do not require the throwing out of small fish, because fish that are caught in the mesh and are gilled, do not live afterwards.-(Ganley).

Port Arthur.- To prohibit marketing fish

under a certain size would cause them to throw the small ones away. You must fix the size of the mesh and let the small ones go through. Make the mesh large enough to let everything through, but about 2 lbs. and over. They dip up the fish with scoops to a certain extent and sometimes they will bring the body of the net in and turn it over into the boat and it is difficult for them to pick out the little fish. Whitefish will not stand very much handling, but will to a certain extent, if not pressed very tight, or a heavy weight put upon them. You can let them go if you are careful.-(Marks).

Would let each man regulate the size of mesh to suit himself, but would not allow him to offer for sale small fish either fresh or salted; would insist on returning all small fish alive to the water.-(Trombley).

REGULATE SIZE OF FISH --- LAKE SUPERIOR.

Grand Marais.- Thinks that the proper way to regulate this would be to fix a penalty for the bringing of number 2 fish in the market. If this were done and the market taken away for such sizes, the fishermen would soon regulate the size of the mesh to suit themselves. They would have no object in catching small sized fish. If they were taken in the nets they would have to be brought to shore and buried or released alive. The fishermen would soon learn that it was not to their interest to use a mesh that would entrap a great many small and unmarketable fishes, which would cause them trouble in disposing of them.--(Connable).

REGULATIONS; FISHERMEN TO SAVE AND RETURN SPAWN.LAKE SUPERIOR.

Duluth.- There is no law you could pass to cause the fishermen to save the spawn. Thinks it would be a good thing to do so, if the fishermen could and would-(Cooley).

Thinks if some law were passed to compel fishermen to take care of their spawn it would help them.-(Flynn).

Bayfield.- They have always made it a rule to have the fishermen save a good deal of the spawn. A law for saving the spawn would have a tendency to bring it before them and there are a great many fishermen who do fertilize the spawn and put it back. They do it on the Tug "Camp". Hardly thinks every fisherman would do it, but the Swedes would be more inclined to do so, because they have been fishermen from birth and are more interested in it.-(Johnson).

LICENSE SYSTEM -- LAKE SUPERIOR.

Duluth.-- If a man has a mile of shore secured to him by license he will take considerable interest in stocking it.--(Coventry).

Thinks it might be a good idea to license pound nets, it might keep some of them from setting so many.--(E. S. Smith).

Bayfield.-- They license their boats in Canada and know what they are doing. Thinks it is a good system and a protection to fish.--(Johnson).

Thinks a license system would be very good and is just what he wants. At present if a man wants to fish in a certain place he has to get around early and drive his stakes, or someone else gets ahead of him, perhaps just as he begins to fish somebody else comes along side of him. It certainly would benefit everybody if the ground could be controlled by a man for a certain space with no danger of someone else crowding him out.--(Chafe).

Whitefish Point.-- Would not approve of a system of licensing such as they have in

Canada. It causes a good deal of trouble among the fishermen and is not satisfactory to them. As far as arranging the mesh is concerned a license system would be a benefit. - (Clark).

Does not believe in a license system. If you have a license system the way fishing is now run it would affect only the rich people. If you put on a license at all put on enough to make it some object. Thinks there ought to be some kind of license to each boat, then you could keep track of it. At Whitefish Point nobody can fish, but they used to fish indiscriminately. - (Roach).

North Shore. - To know how many pound nets there are in each place a license must be charged so that the men will have to apply in order to set their pounds. They should not charge over \$10. for a pound net and a gill net boat should not be over \$5. On the lower Lakes Canada charges \$5. for a gill net while here it charges \$10. For a Tug it charges \$50. on Lake Superior and only \$25. on the lower lakes. - (Ganley).

On the seacoast the Government gives men a bounty and here they charge us a license. Thinks it cost his firm about \$1500. a year for licenses. He believes it is right to have a small license in order to keep track of the men, but it should not be so large.-- (Ganley).

The system of Canadian licenses is rather a hardship on the fishermen. The matter of license, he thinks, would make no difference with the number of fishermen here on Lake Superior or in Whitefish Bay. On the Canadian side they do not mark the area on which a man may use gill nets, but simply allow him to use so many.--(Ainsworth).

Port Arthur.-- Would give a license to fish free, or at least levy a tax on the amount of fish taken.--(Trombley).

There are a lot of pounds owned on the shore which are not set as the people have not enough money to buy licenses. Last year I offer to swear that $1/3$ of my catch went to the Department and the rest went for expenses. This year, I think $1/4$ will go

easily in license fees. Pound net license fee here is \$50.--(Servais).

The tax is not too heavy and they always come up with the money. It is right for a fishermen to pay a heavy tax since it is unskilled labor, takes no time or expense in learning the trade, and has furnished him his fishing grounds.--(Davis).

\$25. is charged for the privilege of tug fishing and \$50. for a pound net.--Murray).

Would have no license or tax on the fishing grounds or nets, but levy a per cent of the value or amount of the catch.--(Maloney).

LICENSE SYSTEM--LAKE SUPERIOR.

Port Arthur.---The fishermen should be made to pay a license. It will only be a --- of a quarter of a century when the lakes will all be depleted if they let them fish promiscuously. In the first place try to find out exactly when the close season should be, and then try to place it so that it will not be a great hardship to the fishermen and at the same time give them to understand that they cannot destroy the fish altogether. In the end it will not make much difference with them because they will get a larger price for the fish. The less fish they catch the greater will be the price, of course. (Marks).

Port Arthur.---Does not believe every man should have a right to fish where he pleases (Brunson).

Port Arthur.---Limiting the amount of nets would be all right, but I do not see where the license system is going to limit the amount of nets. Does not think it is right to confine a man to fish a certain amount of ground (Servais and Beebe).

Port Arthur.---Would let any man fish where he pleased, as close to shore as desired, without any restriction in fact, except as to size of mesh, which should remain as at present (Murray).

LAKE SUPERIOR.

RESTRICTIONS ON NUMBER OF FISHERMEN.

Sand Island.---Neither would he advocate limiting the number of fishermen; that Canadian laws may be good for thickly settled regions, but that there is no need of restricting the numbers in Lake Superior at present (Shaw).

Houghton.---Neither would he limit the number of fishermen nor the locality (Croze).

Keweenaw.---Would not limit the number of fishermen (Teddy).

Grand Marais.---Neither would he limit the number of fishermen (Connable).

Port Arthur.---Would not limit the number of fishermen (Murray).

Port Arthur.---Would limit the number of fishermen in this way. Would not allow more than two men on one lease (Nuttall Bros.).

LIMITING NUMBER OF FISHERMEN -- LAKE SUPERIOR.

Port Arthur.- Would not limit number of
fishermen.-(W. H. Davis).

REGULATIONS---LAKE SUPERIOR.

Port Arthur.---There is always a war between the fishermen and the authorities who are trying to keep them back. The fisherman thinks he should get the fish now and make a living out of them. Labor is poorly paid in other walks of life and if they can do anything at all fishing they can make more than they can ashore (? marks:)

SHALL PROTECTION VEST IN STATE OR FEDERAL GOV-
ERNMENT -- LAKE SUPERIOR.

Duluth.- Thinks there ought to be a uniform law all through the lakes regulated by the Federal Government.--(Cooley).

Bayfield.- The State and Government have got to work hand in hand or they will never replenish the lake.--(Johnson).

The Representatives from the districts bordering on the lakes would want laws to regulate the fisheries, but the representatives of other counties would not care anything about them.--(Johnson).

Sand Island.- The fisheries might be regulated by taking the laws from the States and having them enacted by the United States, and thus prevent conflicting laws in the various and especially adjoining States. The best way to enforce the laws is by a Fish Warden, who should inspect the apparatus, rather than examine the catch of fish. He believes this man should be a United States

officer rather than a State or County official. Would be perfectly satisfied with any regulations the General Government might make which were warranted by the facts in the case.- (Shaw).

Houghton.- Thinks all laws should be made and enforced by the General Government through a Game Warden appointed by the same. As things are the Wisconsin fishermen may come to Michigan and fish, escaping the restrictions placed upon them by their own State laws. Thinks the laws are possibly not made at all times by practical fishermen and they would be much better made by the Government. Believes that all fishermen would favor this project.-(Croze).

Keeweenaw.- As to enforcement of the laws, suggests that the nets be looked after by the Game Warden, but thinks that a warden appointed by the General Government would possibly be better respected than one by the State.-(Teddy).

Bete Grise.- Would be satisfied with any regulations the General Government might

impose that seem to be warranted by the conditions. Is of the opinion that each State should have officers and each State should have its own laws.-(Berriault).

Portage Entry.- Would delegate the authority to make and enforce all fishing laws to the respective States.-(Quinn).

Grand Marais.- Would have all laws made and enforced by the General Government, which would prevent discord between States and fishermen. If enforced by the United States Game Warden the laws would be more satisfactory to the fishermen. If the State Warden undertakes to enforce the laws the people accuse him of favoritism; rather look upon him as an enemy who is seeking to do them harm, or that it is the warden personally who is persecuting them. As an individual and officer he is shown little respect and sometimes has been put out of the Court-room by force.

The State Legislature should not have power to enact laws concerning fisheries. We have had ample proof of this from the repeated non-sensical laws that have been enacted. The

legislators of the various states, as a whole, know nothing about fishing either theoretically or practically. The great majority of them do not even know what a pound net or gill net is like. They know nothing of the manner of fishing, places or time, the sizes of fish caught, their uses or abuses. State law making is a log-rolling process without merit.

Would not only be satisfied with any and all laws that the United States Government might make and enforce, but would be only too glad to have this done.--(Connable).

Marquette.-- Let the Government take care of it entirely and not the State. There are too many States with a hand in the pie, and each has its own laws. Believes the Government could make it more effective as they could do it more easily than so many different States.--(Grant).

Whitefish Point.-- The State is supposed to carry out the regulations for looking after the mesh, but does not do so.--(Clarke).

There is no use making any laws unless it is a United States law. There is no use

in one State making a law because no one will live up to it. Moreover if one State had certain regulations and another does not, it would not be a fair thing.-(Endress).

Port Arthur.- Fish are getting to be a luxury now and it is a question whether you should protect that luxury. Thinks that the Federal Government should levy a tax. Thinks it would be right to take from the national treasury to keep up the fisheries, as it is for the general benefit. I think it would be better to have the Federal Government take charge of the fisheries if it could be done.-(Marks).

Speaking of the Inter-national Fisheries Conference of two years previous he stated as follows:

The conference was going to represent to all the State Legislatures, by a report, that the control of the fisheries, in their opinion, should be placed under the Federal head; but I could not say whether this agreement was carried out or not.

LAKE SUPERIOR.

SHALL PROTECTION VEST IN STATE

OR FEDERAL GOVERNMENT ?

Port Arthur.---Would have regulations enforced by Government officer, except in small towns where some local officer should have power. Would have fewer regulations (Trombley and Beebe).

Port Arthur.---We do not know here whether the Provinces have the right or not to look after regulations. The Federal Government took it upon themselves to attend to the fishery affairs and it has not been contested. We have a man here who is the jailor, and if he knows of any one netting speckled trout he will have them up (Marks).

Port Arthur.---Thinks the laws are fairly well observed here. With respect to being satisfied with laws which might be imposed by the Government, Mr. Murray said that laws identical with the United States laws would be very satisfactory to him (Murray).

RESERVES--LAKE SUPERIOR.

Sand Island.---That fishing might even during this month if they were kept from the reefs or spawning grounds.

Would not prohibit the setting of nets any place in the lake, and especially if there was a closed season in November (Shaw).

Houghton---Fisheries in general, he thinks, do not require any regulations, excepting possibly prohibiting at any season of the year or with any apparatus whatever on well defined spawning grounds.

Would allow the fishermen to fish near the shore or in deep water, at will (Croze).

Keweenaw.---Does not see that any one should be prohibited from fishing on any territory where he may find it to his profit to do so (Teddy).

Portage Entry.---Would also prohibit setting twine of any kind on the most important spawning grounds at any season of the year (Quinn).

Grand Marais.---Would not prohibit any one from fishing on any grounds either far from or near to the shore (Connable).

Marquette.---Thinks the best way to protect the fish would be to stop the fishing on the spawning grounds. The spawning grounds are all close inshore on rock bottom.

Would stop fishing withing a certain distance of the shore during the spawning season (Hanson)

Whitfish Point.---They do not have many reefs on this side of the lake for spawning grounds. The only way he sees to gover it is to have a close season on the entire shore, then none of them could kick (Pratt).

Soo.---There is a place in Thunder Bay, Lake Superior, where there is a reserve and

they do not allow any fishing at all (Elliott).

Port Arthur.---Possibly it would be well to keep apparatus off of known spawning grounds.

Would not prohibit fishing on any areas, except possibly those known to be spawning grounds, and then only during the spawning season (Trombley and Beebe).

Port Arthur.---There is a breeding reserve around Pie Island (Marks).

Port Arthur.---They have some reserves here already. They are west of us here. There is one or two miles all around Pie Island reserved by the Government, and about 15 miles up the shore here that is reserved, and only Indians allowed to fish there. By simply reserving a place for them to spawn, I cannot see how we are going to be benefitted by that. In the first place, there is only about 5 % of their spawn matures, while with hatcheries we can mature 95 %. And, also, after they spawn in nature,

45 % of out the 5 % die, while if they are taken care of they will about all live. This shore is limited enough anyway to fishermen, as we have not a straight shore all the way along where we can fish, as there are only a few places where we can fish pound nets, or even gill nets (Beebe).

Port Arthur.---There is something I do not understand in this country: They will not allow you to set within a mile of the mouth of a river, and will not allow you to put a net in in the winter time. If we could put a net in at the mouth of the river here, we could catch all these cheap fish, such as suckers, buffalo, etc. Would want to fish mostly pound nets then (Servais and Beebe).

Port Arthur.---As to prohibiting fishing on certain areas, believe that a reserve encourages poaching, by making a place to poach.

Does not think the Pie Island reserve does any good (Davis).

Port Arthur.---Would not prohibit fishing in any certain areas, since some will do it any way with gills (Nuttall Bros.).

Port Arthur.---Would prohibit fishing in no areas, since it encourages poaching, and the bolder fishermen fish these grounds almost at will. Neither would he limit the number of nets set in a string (Maloney).

Port Arthur.---It would be a good plan to allow no nets to be fished on any reef (Marks).

RIPARIAN RIGHTS --- LAKE SUPERIOR.

Whitefish Point.-- The law says now that nobody can set in front of a man's land if he occupies it himself. He thinks the law specified that if you occupy your frontage for fishing purposes no one else can occupy it.-(Clark).

INDIAN RIGHTS--LAKE SUPERIOR.

3

Bayfield.---They claim that the Indians by treaty with the Government, can fish anywhere they want to and do as they want to along their reservation which extends west some distance from Bayfield. They claim in their treaty that they can fish anything and everything they want to at any time, and that the state laws have no effect upon them whatever. They fish mostly pound nets, and use smaller mesh than the others--use what mesh they please. They all own their own pound nets.

What knocks out the State of Wisconsin, however, is that most of the grounds are embraced in the Indian Reservation, and if the Indians can fish anything they want to, what can we do?

2

It is like this: suppose I own 2 or 3 pound nets. I can give them to an Indian for a couple of months, and say, "you fish them and turn the

fish in in your name," and the Indian says,
all right, he will fish them for me in that
way, and if a fish warden comes along he tells
him, "these are my nets" and so they get around
the law (Johnson).

REGULATIONS; MISCELLANEOUS STATEMENTS.

LAKE SUPERIOR.

Duluth.---Thinks Canadian fish laws are very unjust (Wires).

Duluth.---There are considerable many things he would like to see improved upon in regulating these fisheries (Kalmbach).

Duluth.---There are no regulations regarding fishing in the lake now (E.S. Smith).

Sand Island.---At present, and in the State of Wisconsin, the fishing does not need any regulations under existing laws; that he regards the laws as they are sufficient to protect the fishes; that the laws are reasonably well enforced and are becoming better and better obeyed (Shaw).

Houghton.---The existing laws are pretty well obeyed so far as his knowledge goes (Croze).

Keweenaw.---With regard to regulations, Teddy thinks the fisheries need none, and would make no suggestions as to apparatus and appliances (Teddy).

(Mr. Teddy evades any direct answers on these questions, but it is plain that he favors no regulations whatever, allowing every man to take large and small and at any season of the year).

Bete Grise.---Mr. Berriault does not think this region requires any protection; that the laws are pretty well obeyed (Berriault).

Portage Entry.---Does not think that regulations to any great extent are required (Quinn).

Grand Marais.---The fisheries do require regulating, not so much as to the way fish are caught, but concerning the sizes that are marketable.

Existing laws, as far as he is able to say, are reasonably well enforced (Connable).

Marquette.---We have a fish and game warden. The state has but one game warden, and he appoints his deputies, one in each of the counties. The state warden is paid by the State, and his deputies are paid by the counties (Grant).

Whitofish Point.---The people on the Canadian shore are very exacting of their fishermen. They are doing their part towards the protection of the fisheries, and the people on this shore ought to do something. The fish are like fowls; they pass around from one shore to the other, and we are getting the benefit of their protection (Clark).

Whitefish Point.---Capt. Atwood doesn't have much faith in fishery regulations. Doesn't think they are generally advantageous. (He has had trouble with the Canadian Government on Lake Winnipeg, according to Dr. Wakeham).

Soo.---On this lake the water is so deep, that the fish have a chance to escape, and it does not require the protection that Lake Erie or Georgian Bay does, because you can only fish a certain distance out (Ganley).

Soo.---The lake trout he would not protect in any way in Lake Superior, as they get more trout than they can sell.

He considers the fisheries on the Canadian side in better condition than they are on this side (Ainsworth).

Soo.---Thinks the regulations amount to nothing at present on the American side, but those on the Canada side are all right with some exceptions (Coates).

Port Arthur.---Yes the fisheries do need regulating.

Existing laws are obeyed only partially, but are but little respected. They are enforced at the caprice of the game warden of the district.

Laws are not well enforced, but there are so many, and so nonsensical that it gives the game warden a great deal of power, with which he is liable to shield some and burden others. For instance, the law requires a 4 1/2 inch mesh in the pot of a pound net. It also requires the trap door to be closed before 6 P.M. Saturday evening, and must not be opened before 6 A.M. Monday morning. Gill nets also must not be in the water Sunday. These and other laws exist but are enforced at the option of the warden (Trombley and Beebe).

Port Arthur.---The existing laws are pretty well respected by fishermen, but not well enforced. Thinks that the laws ought to be rigidly enforced, and that they are not too rigid. Thinks that it is seeing the Americans fishing with comparatively no restriction that make the Canadians dissatisfied. That the Canadians are preserving and allowing the fish to increase

while the Americans are destroying.

Fish wardens should not have the option of granting or revoking license for mere personal affairs (W.H.Davis).

Port Arthur.---Existing laws are well observed, but are not all enforced (Nuttall Bros.).

Port Arthur.---Existing laws are fairly well respected, and moderately well enforced (Maloney).

LAKE SUPERIOR.

INTERNATIONAL FISHERIES CONFERENCE.

Port Arthur.---In the International Fishery Conference of two years ago the general tendency of opinion was to observe the close season, and at the same time to keep supplying the waters with the artificial way of hatching, and to get that as perfect as they could, and I think every delegate was anxious to preserve the close season, and not let too many be caught by any one man. They expressed themselves very strongly against those big fishermen in Lake Erie for catching them when they came to spawn. One man said he sent his pound nets from the American to the Canadian side and bragged that he went within 1 1/2 miles of the Canadian shore, and the reply to that by one of the gentlemen was, that he hoped a Canadian Cruiser would come along and cut them into a

thousand pieces.

J He said, "how am I going to catch them in any other way. I cannot afford to follow them out into the lake here, and if you will show me any way in which I can catch those fish without catching them in the spawning season, I will follow your suggestions," and he said that if any passed their nets they caught them when they were coming back. And then we put Wilmot after him and he abused him roundly.

 The Conference was going to represent to all the State Legislatures, by a report that the control of the fish, in their opinion, should be placed under the Federal head, but I could not say whether this agreement was carried out or not. There was a very general opinion that there should be a close season, and to have hatcheries in every state. They spoke very much in favor of the United States trying to observe the close season, and they wanted to know why they could not do it if we could (Marks).

RELEASING FISH ALIVE.

RELEASING WHITEFISH ALIVE FROM NETS--
LAKE SUPERIOR.

General. The fishermen could release the small fish from pound nets if they would be careful. (Kalmbach).

General. A regulation that would release the small whitefish could hardly be enforced, as it is not for the interest of the men to do it. Their rigs are adapted for the capture of small fish. (Cooley).

West End. In the pounds it is a good deal of bother to set the young whitefish free, because they scoop them all out into the boat together, and when that has been done it is too late to return any alive. They could turn them into the water, but they look at it like this: they have them, and there is a cent and a half apiece in them and so they keep them. (Cooley).

Whitefish Point. Whitefish are very delicate, and if you leave them out of the water for a minute or so 9 times out of 10 they will not come to. As they get larger, however, their vitality is greater and they will live longer out of the water than the little ones. (Endress).

Whitefish Point. There is no use trying to throw the small fish out of pound nets. When a young whitefish is out of the water he is gone. Might possibly scoop them out of a net, but it is hard to get at them. (Pratt).

Whitefish Bay. They could release the small fish alive and does not know but that it would be better to do so. Does not know that it would be well to make a minimum size of whitefish because if they got smaller fish does not know whether it would do to let them go or not; whether they would live

or not. Thinks there would be a great many killed in taking them out of the nets and letting them go. There are very few unmarketable fish caught at the present time in the present size nets. (Johnson).

Port Arthur. Whitefish will not stand very much handling, but will to some extent if you do not press them very tight or put a heavy weight on them. You can let them go if you are careful. (Marks).

Port Arthur. Whitefish are a more delicate fish to keep than trout or pickerel (wall-eye). (Trombley).

RELEASING WHITEFISH ALIVE--LAKE SUPERIOR.

Port Arthur. Smaller than 1 pound D. are released alive from pounds by dipping over the edges of the nets. (Trombley).

Will not stand much handling. Can let them go if you are careful. (Marks).

More delicate than trout or wall-eye. (Trombley).

Would advocate throwing out the small fish. (Murray).

Undersizes are scooped into the water, but less trouble to scoop into boat. (Nuttall).

Under 1 1/2 pounds thrown away; sometimes dipped into water, but more generally into boat first. (Maloney).

West End. Can release small fishes from pounds if they are careful. (Kalmbach).

Law for releasing could hardly be en-

forced, as it is not for the interest of the men to do so. Their rigs are adapted for the capture of small fish. (Cooley).

Whitefish Point. Small are very delicate. Will scarcely live a minute out of the water. (Endress).

No use trying to throw out small fish. When a young whitefish is out of the water he is gone. Might possibly scoop them out of the net, but it is hard work to get at them. (Pratt).

Whitefish Bay. Could release small ones alive, and does not know but what it would be best to do so. (Johnson).

Thinks a great many would be killed in taking them out and letting them go. There are but few unmarketable fish caught at the present time in the present size of mesh. (Johnson).

West End. If the fishermen would be care-

ful and take pains, they could release the small fish all right. But lots of fishermen are not particular about what they catch. (E.S.Smith).

RELEASING SMALL FISH ALIVE--LAKE SUPERIOR.

West End.---If the fishermen would be careful and take pains they could release the small fish all right, but lots of fishermen are not particular about what they catch(E.S.Smith).

Port Arthur.---Would advocate throwing out the small fish (Murray).

Port Arthur.---Smaller fish than 1 lb. dressed are released alive; dipped over the edge of the net (Trombley).

Port Arthur.---The under sizes are scooped out of the net into the water, although it is really less trouble to scoop into the boats and take ashore with the offal (Nuttall).

Port Arthur.---Fish smaller than 1 1/2 lbs. are thrown away. They are sometimes dipped out of the net, but more generally thrown out after having been dipped into the boat (Maloney)

RELEASING TROUT ALIVE--LAKE SUPERIOR.

Port Arthur.---Trout are a more hardy
fish to keep than whitefish (Trombley).

POUND NETS--LAKE SUPERIOR.

1894.

RELEASING SMALL FISH.

WISCONSIN.(South Shore).

M.F.Kalmbach, Duluth.--- After they get them in a pound, fishermen could release the small fish alive if they would be careful' about it.

J.E.Cooley, Duluth.--- On this shore where they use so many pound nets, they would never turn the small fish away. They scoop them all out into the boat together, and then it is too late to return any alive to the water. They could turn them into the water, but they look at it this way; each one is worth a cent and a half, and as they have them they may as well keep them.

Jno. Clark, Whitefish Point.---If small whitefish get into a pot and cannot readily escape, they are so tender that they are

damaged during lifting, and if they get into the water afterwards they will not live.

F.W.Roach, Soo.---The difficulty of throwing out small fish when lifting pounds is, that half of them get gilled and get their scales knocked off, so that when thrown out they die.

S.J.Johnson, Whitefish Bay.--- Thinks a great many whitefish would be killed in trying to release them from the pounds. It would be very well to throw out the small fish if fishermen would do it. It would be a great inconvenience, because when there are 1,500 to 2,000 lbs. of fish, it is a pretty hard matter to pick out all the fish under a lb. Out of 50 tons of marketable fish, would get perhaps 50 packages of the small fish.

C.E.Ainsworth, Soo.--- The small fish are usually thrown back in the water. They can generally be gotten back alive, but those that are dead are salted. When fishing, the men

seldom have time to look after the small ones, and this year especially, no attempt was made to salt them. When fishing was begun this spring, they commenced sending down small fish, and I must have culled out 7 or 8 hundred lbs. from the first lot. I declined to take fish from them if they sent that class, and since then, they have been putting that class of fish back into the water, except when they were dead, and then they salted them.

J. Brunson, Port Arthur.--- Though comparatively few young fish of any species are taken, the greatest number seem to appear in the spring of the year. They are promptly turned out by means of a dip net; it would not be practical to lower one side of the net and allow them to run out.

P. Trombley, Port Arthur.--- Thinks the mesh should be big enough to allow small fish to escape, so as to avoid having to throw any away.

Trombley and Beebe, Port Arthur.---Small fish can be dipped out of the pound without permanent injury.

Nuttall Bros., Port Arthur.--- Thinks that about half of the young fish die that are thrown out of the pound net.

J.Maloney, Port Arthur.--- Small fish are easily released alive from pound nets. Can be dipped out of the nets before taken into the boats without injury, but it is not practical to let them escape over the top of the nets by letting one side down.

POUND NETS; RELEASING FISH ALIVE.

LAKE SUPERIOR.

Grand Marais.-- If not permitted to market fish under a certain size, the fisherman would learn that it was to his advantage to allow such fishes to escape from the nets uninjured. That this could easily be done by allowing one side of the net sink down and allow the small fish escape.--(Connable).

Whitefish Bay.-- It would be all right to throw overboard the small fish if the fishermen would do it. It would be a great inconvenience, however, because where you get from 1500 to 2000 lbs., it is pretty hard to pick out all the fish under a pound. Would not get a great many in the course of a season to salt, however. Out of 50 tons of marketable fish he would get perhaps 50 packages of small fish.--(Johnson).

Whitefish Bay.-- When they commenced this spring they began sending down small fish. I told them we would not take the fish if they brought that class. Since then they have been putting the small ones back

into the water, unless they were dead when they salted them.--(Ainsworth).

Port Arthur.-- Thinks mesh should be big enough so as to allow the small fish to escape and not be obliged to throw any away. Small fish can be dipped out of the pounds without permanent injury.--(Trombley).

Believes that about 1/2 of the young fish thrown out of the pound nets die.--(Nuttall).

Would throw out all small fishes taken in the pound nets before taking them into the boat. They can be dipped out of the nets without injury, but it is not practical to let them escape over the top of the net by letting one side down. Small fish are easily released alive from pound nets.--(Maloney).

There are comparatively few young fish taken in the pounds, but the greatest number seem to appear in the spring. These are promptly turned loose. This is done by means of dip nets. Would not be practical to lower one side of the net and allow them to run out.--(Brunson).

RELEASING FISH ALIVE FROM GILL NETS.

LAKE SUPERIOR.

North Shore.- A fisherman could not get all the small fish back into the water alive from his gill nets.-(Ainsworth).

Port Arthur.- Small fish can be dipped from the pound net without permanent injury.-(Trombley).

Small fish cannot be returned alive to the water from the gill nets.-(Trombley).

Small fish are easily released alive from the pounds.-(Maloney).

Would throw out all small fish before pulling them into the boat.-(W. H. Davis).

Bete Grise.- Many of the smaller fish might be released from the pound nets uninjured.-(Croze).

RELEASING FISH ALIVE---LAKE SUPERIOR.

Marquette.---He can let the little fish go from the gill nets alive generally (Parker).

Port Arthur.---Cannot return small fish taken in gill nets alive to the water(Trombley).

CAN SMALL FISH BE RELEASED ALIVE FROM
GILL NETS--LAKE SUPERIOR.

Port Arthur. Cannot return small fish
taken in gill nets alive to the water. (Trom-
bley).

Young or waste fishes taken in the gill
nets are injured in removing. (Maloney).

RELEASING WALL-EYED PIKE ALIVE,
LAKE SUPERIOR.

Port Arthur.---Pickerel are a more hardy
fish to keep than whitefish (Trombley).

PROPAGATION.

BENEFIT OF HATCHERIES--LAKE SUPERIOR.

Duluth.---Thinks the close season which they have in Canada for whitefish and trout in November more of a protection than the hatching work.

Mr. A. Booth has a theory regarding the hatcheries, although he (Mr. Coventry) doesn't believe much in it. Booth says they are all right but they do not go far enough.

They take the trout right after they are hatched and put them in the water. After going a little ways the big trout come along and swallow them all up. Think they should let the fry grow until they are four inches long, and then it would be hard for other fish to catch them.

Mr. Coventry would have a close season in the fall for the protection of whitefish and trout when they are spawning. On the Canadian grounds the close season creates a large

supply of whitefish every year. They have no hatchery at all, but simply give them 30 days in which to spawn.

Thinks that in Thunder Bay (Port Arthur) they catch more fish per net than they used to.

When you put in lake trout fry they seem to stay pretty well around that locality. The trout do not seem to move around much.

Before Mr. Wiros came here the fish from the hatchery at Lester Park were mostly strewn along the shore within a mile or two. The fishing is getting less productive every year between Two Harbors and Beaver Bay, but down this way where plants were made from the hatchery as explained above, the fishing has improved. Before the hatchery was started they were just as scarce between here and Two Harbors, as they are now between the latter place and Beaver Bay.
(Coventry).

Whitefish Point.---But these fish hatcheries are a great thing and there ought to be more of them. There ought to be a close season. They ought to stop them fishing on both sides from the 1st to the 20th of October, and then again from the 1st to the 15th or 20th of November. If you would do that you would save the fish. And then go right where these good spawning grounds are and let your men catch those fish just for the eggs and nothing else (Roach).

Soo.---He believes that they should have the hatcheries and a close season from the 15th of November. The Government should have enough boats to catch those large whitefish so as to fill the hatcheries with spawn. They should allow enough fishing to be done so as to take enough of these large whitefish to have sufficient spawn to fill all the hatcheries, because

there are an abundance of fish to be caught when they come on the shallows, and by that process they would have 85 to 90 per cent of them to be put back on those grounds. He believes that wherever you take a fish from, if you put the spawn back in that water they will come to maturity better than if you put them in some other lake. You can get enough spawn to fill all the hatcheries up on their grounds. He thinks each lake should have hatcheries enough to supply that lake. You can get spawn down the river here and up the shore.

If it had not been for the planting at Detour they would not have been able to catch enough fish to do business there. The fishermen claim that themselves. They have had better fishing there these last 2 years than they had 10 years ago.

Thinks it would be a good idea to collect those licenses from the fishermen and then turn

the money right over to the hatcheries. It would satisfy most of the men to know that the money was going into the hatcheries and they would get it back again. If they had a hatchery here in the river the man who looked after the hatchery could look after a large portion of the lake here (Ganley).

Soo.---He is in a general way opposed to fish planting unless suitable regulations are carried out for the protection of fish (Coates).

Soo.---Believes hatcheries are a good thing (Elliott).

Port Arthur.---First sell the "gun-boat" and establish hatcheries with the proceeds (Trombley and Beebe).

Port Arthur.---The only way to protect and save the fish is to stop the fishing altogether, I guess. I think if they would get up more hatcheries here and plant the fish we might have more fish than we do have. I do not see any other way. If we cannot get the eggs we cannot plant them of course (P.Trombley).

HATCHERIES--LAKE SUPERIOR.

Port Arthur. Wilmot claimed he was the father of fish culture, but we found fish hatcheries much larger than his and I think a nicer system. (Thomas Marks, Port Arthur).

(Dr. Wakeham says that in 1847 Mr. Richard Knettle established a fish hatchery in Quebec. He had it in his house).

We have a fine site for a hatchery down on Current river. Americans whom he has spoken to from Duluth claim there is no need of regulations if they have hatcheries. They claim that in their natural state only about 15 per cent. mature, while by means of hatcheries they can hatch out about 95 per cent. (McDonnell). (P. Trombley, Port Arthur).

Believes they have a fine place for a hatchery here. Can get their water from the Current river. At the mouth there is a nice

place where the little fish could be put in. The water is quite a little warmer than the lake. During the winter, however, it is probably as cold as you would get from any stream. (Servais & Beebe, Port Arthur).

If a hatchery was started in this neighborhood we could get plenty of spawn for them here if they would allow us to fish in November. (Servais & Beebe, Port Arthur).

Capt. Murray also paid a high compliment with respect to the United States method of conducting the fisheries, which he believed far superior to the Canadian system. He favored the idea of establishing hatcheries, believing that nine out of ten of the fish taken from the hatchery and put in the water came to maturity. (A. Murray, Port Arthur).

Was convinced that Canadian fishermen thought hatcheries were essential to the future supply of fish in these waters. (A. Murray, Port Arthur).

HATCHERIES --- LAKE SUPERIOR.

Whitefish Point.- Lake Superior has never had any hatcheries until 3 years ago this spring when the first fish were put in here.--(Endress).

PROPAGATION; WHERE FRY SHOULD BE PLANTED---
LAKE SUPERIOR.

Whitefish Point.---He thinks the hatcheries make a mistake in regard to the places where they deposit their small fish, whether whitefish or trout. Small fish usually go into shallow water for food and protection. They will go where the larger fish cannot get under them. The lake trout live on the small fish and if they are put in deep water they just make food for them. In Taquamenon Bay there is a large stretch of water that is quite shallow and at any time in the season it is all alive with young fish. They go in there to get their food and they get away from the large fish. Has seen young wall-eyed pike there, and also what he took to be young whitefish, but never took them out of the water.

The only other suggestion he would feel like making is that deposits of small fish should be put in shallow water close to the shore where they can get nourishment right away. A person in the fish hatchery would know what amount of nourishment a fish requires

or whether they could get all the nourishment they needed from pure water. I do not think they can. If they are thrown over in shallow water they are where they can pick up particles out of the sand. There is all sorts of nourishment washed from rivers and carried around the shore, but when the young fish are let go way out from shore they do not know which way to take to get inshore (Clark).

FISHERMEN RETURNING SPAWN---LAKE SUPERIOR.

General.---Has done everything he could ever since he has been connected with the hatching work to interest every fisherman he came in contact with and to teach him how to take and fertilize fish eggs. Has advised fishermen to put them back on the grounds when they get them in quantities too small for him to bother with. Where I have found one that would do it I would find 20 who would not (Wires)

Sand Island.---When spawning fish are taken in the gill nets, etc., so far as he knows the spawn is thrown back into the water (Shaw).

Apostle Islands.---When ripe whitefish and trout are taken, sometimes the eggs are mixed with the milt and thrown back into the water (James Smith).

Bete Grise.---During his time the spawn was not fertilized and thrown into the water. It was allowed to go with the offal, which was always buried (Croze).

DISPOSITION OF SPAWN --- LAKE SUPERIOR.

Port Arthur.-- Spawn is thrown away with the offal.--(Maloney).

Bayfield.-- During his experience as a fisherman when spawning whitefish were taken they were stripped and the eggs thoroughly mixed with milt and poured overboard.--(Draglund).

SPAWN AS FOOD---LAKE SUPERIOR.

Keweenaw.---The spawn of both whitefish and trout is eaten by Scandanavians and Finlanders. It is sometimes salted and thus made into a sort of caviar (Teddy).

Bete Grise.---The spawn of both the whitefish and trout is highly prized by the Finlanders. It is cooked and eaten, and also salted sometimes the same as sturgeon eggs in the preparation of caviar. In this condition a ready market is found for this spawn among the Fins (Berriault).

MARKETS, PREPARATION, PRICES, &c.

MARKETS AND PREPARATION OF CATCH--

LAKE SUPERIOR.

Isle Royale. The Booth Company took all the fish at Isle Royale until this spring, but do not handle them all now. Now the Stone and Ordean Company is putting up the money and is handling those salt fish. They are handling most of the fish over there this season. The fishermen would not accept the price of Booth last spring and thought they could raise him a little, but he would not give them what they wanted for their fish so they gave them to Stone-Ordean. Mr. Kalmbach got the fishermen into it. There are 16 or 18 boats out of the 24 that work at Isle Royale that salt their fish and ship them over here to Stone-Ordean, who handle them on commission. They salt a very large proportion of their fish-- $2/3$ or more. Mr.

Kalmbach can tell you exactly the proportion. The reason they salt them is that the boats do not go there often enough to get them. When they shipped to Booth, he used to send his boat around there twice a week and he took nearly all of them fresh. (Wires).

Bayfield. Bayfield is the center for the Apostle Islands and Chequamegon Bay. Bayfield is a little town of probably 600 or 800 inhabitants. It is a summer resort. Mr. Johnson, of Bayfield, can tell all about the fishing in that locality. He is the manager of the A.Booth Packing Company. (Wires).

Duluth. Mr.Kalmbach acts as the manager of the fishing business of Stone-Ordean Company. It is said that his statements are not always to be relied upon. This company has begun to take fish only within a year. Until this year the A.Booth Packing Company practically controlled all the fisheries

along the Minnesota shore, Isle Royale and the south shore from Duluth to Ashland and even beyond.

Duluth, Superior. They do not bring any fish into Superior. Duluth is the only market. Kalmbach handles mostly salt fish. (E.S.Smith).

Isle Royale. We are salting all our fish and are putting up a first quality salt fish. (John T.Johns).

The steamer "S.B.Barker" is owned by the A.Booth Packing Company at Duluth. Mr.E. Smith is captain. She runs between Duluth and Ashland, stopping at Bayfield, as a freight and passenger boat. On each return trip to Duluth (3 a week) she picks up fish for the Booth Company at all places between Duluth and Bark Harbor. (E.Smith).

Duluth. The fish from this market are shipped directly west and south-west. They have their places for marketing, and take

care not to interfere with the markets reached by the Chicago house. Their headquarters are in St. Paul. The above relates to Booth's branch house in Duluth. (Rathbun, July 9, 1894).

Marquette. They sell a good deal of fish locally, but all their surplus of fish goes to the west; to Kansas City, Omaha and Denver. The salt fish principally goes to Chicago and occasionally to Detroit.

When they started fishing here they supposed they could not ship fresh fish outside of the county, but after awhile they commenced to send them down to Green Bay, and then began shipping them to Chicago, Kansas City, Topeka and Denver. Our whitefish beat any whitefish in the market. (Grant).

Soo. The fishermen's price here for whitefish is 4 cents. The firm does not buy many of the fish scooped by the Indians be-

cause the latter sell them along the wharves, and get more for them. They have paid them as high as 5 or 6 cents a pound, however. (Ganley).

They are the only large fishing firm between Whitefish Point and Detour. (Ainsworth).

Soo. The Green Bay runs in the interests of the A.Booth Packing Company, from Sault Ste.Marie to Whitefish Point, Grand Marais, Caribou Island and Michipicoten Island.

The fish cars used by Endress for shipping are intended to hold about 1,400 or 1,500 pounds of fish, exclusive of the ice. Booth's cars were built to hold about 1,600 pounds. (Coates).

Port Arthur. Our men only get 3 cents per pound, while they are paying 5 and 6 cents for the same fish in Lake Erie. That is both whitefish and trout, and it is too

little. The western people do not want so much fish as the eastern people. The old inhabitants of the Eastern States are fond of fish. I have seen them eating fish on the Mediterranean, and they would give you a fish breakfast, and you would not want another if you had ever eaten fish here. (Thomas Marks).

Before Booth came here the Northern Fish Company, of Minneapolis, controlled the fishing here. Has heard of the Baltimore Packing Company, but never heard of them in this country. Here there has been the Northern Fish Company, and they were here about 3 years. Cooley & Lavaque were about the first ones, and then the Northern Company came after them; but I suppose it was all the same firm. There were no fish dealers here before them. Had to ship the fish ourselves. (P.Trombley).

St. Paul and Minneapolis were our best markets. Twenty years ago we shipped them in boxes first by boat. The boats were running from Duluth here, small tugs the same as now, only smaller. Towing tugs the most of them. They ran pretty near all winter, which is more than they do now. (P. Trombley).

(Mr. McDonnell does not think any fish go from here to Detroit unless they go from here to Duluth and down. They go from here to Duluth and to Toronto, Montreal and those places. I have never heard of any fish going from here to Detroit).

(All fish caught from Jack Fish, Rossport, and Port Caldwell are shipped east by the C.P.R. Only fish from the middle of St. Ignace and west come in here--McDonnell).
(P. Trombley).

Booth buys the fish here. Kalmbach does nothing up here. Luttel Bros. also buy fish

here and ship east mostly. They ship nearly as much at present as Booth, but as a rule Booth probably would take $3/4$ and Luttel Bros. $1/4$ for the season. (Servais & Beebe).

The fish are shipped from Rossport, Jackfish and Caldwell by railroad. They are all shipped to Canadian ports. They go down by the C.P.R. (Servais & Beebe).

The people get more for their fish elsewhere and pay less freight. They get 3 cents for whitefish and trout both, dressed and delivered. Sturgeon are worth $1\ 1/2$ cents a pound. (Servais & Beebe).

Outside of their own fishery, the Booth Company buys fish of all parties fishing here under contract. (J.Brunson).

The company salts no fish whatever at this place, selling every thing which is salable to fresh markets. (J.Brunson).

About $3/4$ of the fish are sold fresh and $1/4$ salted. (A.Murray).

MARKETS; PREPARATION; PRICES -- LAKE SUPERIOR.

Port Arthur.-- In Lake Winnepeg they could not sell all the fish they catch. In fact I think they were offering them for 1 1/4 cents this spring. Booth makes the price for the fishermen on this lake. Fish are higher now than they were 20 years ago, but then meats are higher, and yet they are more plentiful and they can raise it cheaper, people now want a better quality.--(Marks).

At the time Mr. Davis was fishing 2/3 of the fish caught were marketed fresh and 1/3 salted.--(W. H. Davis).

Soo.-- Examined a sail boat load of fish brought in July 28, 1894, from the pound nets of J. Fix and S. Johnson, in the southern part of Whitefish Bay. Most of the fish had simply been packed in the boat (an open fishing boat) with a relatively small amount of ice. Two points, at the seats and centerboard, had wooden covers, but the remainder of the fish were covered with canvas. They came in in good condition.--(Rathbun).

PREPARATION OF FISH---LAKE SUPERIOR.

Bete Grise.---During his fishery the fish taken were nearly all salted. Tried marketing fresh for a while, but owing to the scarcity of ice and poor facilities for transportation it was not profitable.

Under sized fish are salted and called No. 2; if very small, No. 3 (Croise).

Bete Grise.---The smallest size fish are not salted more than the larger. In fact the larger fish are usually salted while the smaller ones are sold fresh, the larger ones not becoming damaged from the effects of salt as do the smaller (They probably sell most of the fish locally)(Berriault).

POUND NETS; MARKET FOR FISH --- LAKE SUPERIOR.

Marquette.-- The fish that are caught in the pounds are sold all over. Very few of them are landed here.--(Grant).

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PREPARATION OF WHITEFISH--LAKE SUPERIOR.

Sand Island.---The under sized or smaller whitefish are salted (Shaw).

Apostle Islands.---The small whitefish are salted (James Smith).

PREPARATION OF WHITEFISH --- LAKE SUPERIOR.

Marquette.- The heads are left on all fresh fish sold, but they are taken off of salted fish. The salt fish are split on the back and the fresh fish are split on the belly. Salted fish split on the belly do not bring any price.-(Grant).

Port Arthur.- The smallest of the whitefish are salted, but the large ones are never salted. The larger the fish, the better.-(Davis).

PREPARATION OF TROUT---LAKE SUPERIOR.

Sand Island.---All trout are sold fresh
(Shaw).

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PREPARATION OF TROUT--LAKE SUPERIOR.

Port Arthur.---Trout between the weights of 4 and 9 lbs. are marketed fresh. When over 9 or 10 lbs. they are salted. The smaller ones, from 2 $\frac{1}{2}$ to 4 lbs., are also salted (Davis).

WHITEFISH; PRICES -- LAKE SUPERIOR.

Port Arthur.- We are getting 2 1/2 cents
a lb. now on the ground for whitefish.-
(Trombley).

RELATIVE MARKET VALUE OF FISHES--LAKE SUPERIOR.

Bayfield.---He sells whitefish, lake trout
and wall-eyed pike all at the same price(Johnson

HERRING; MARKETS, PREPARATION, PRICES.

LAKE SUPERIOR.

Port Arthur.-- There is no sale for herring here. Want them only for the local market. We have tried to smoke them, but they did not taste very well.--(Trombley).

The market for herring is so limited that the price is very low, less than 1 cent per lb.--(Brunson).

Duluth.-- There is not much of a market for herring at this end of the lake and they only catch them in the winter to amount to anything. Most of the herring caught about here at this season, (Summer) are sold by basket peddlers.--(Coventry).

West End.-- The small boat fishermen sell the herring for 10 or 15 cents a hundred lbs.--(E. S. Smith).

Isle Royale.-- There has never been any market here for herring and therefore they never fished for them. Has heard more of herring nets this spring than ever before. He has brought a few packages of herring over from Isle Royale to Duluth.--(Flynn).

He does not catch herring for market, and those caught are used for bait or thrown back, if alive.--(Johns).

Bayfield.-- They freeze some herring but do not want to take them until the weather gets cold as they cannot handle them well. They used to freeze a lot of them, but do not now. The price was about 1/2 cent a lb. and they came down to about nothing.--(LaBelle).

Keweenaw.-- Few herring nets are fished since the season is very short and the fish sell for 1 1/2 to 1 cent a lb.--(Teddy).

Marquette.-- They can sell the herring near by, but cannot send them away.--(Anderson).

He ships the herring to towns near by. Cannot ship them very far as they are pretty small to salt. Thinks they would be good smoked, but has never tried it.--(Hanson).

There is so little demand for herring in this region that there is very slight inducement to fish for them. They can only be sold this part of Michigan where they reach a few small markets in fresh condition. They are not salted or frozen as there is no profit in

shipping them far away, having to compete with the larger herring of Lake Erie and elsewhere.--(Rathbun).

Whitefish Point.-- I think we put up 70 bbls. one day when I was fishing and I shipped them to the Soo, where I think they paid me about 12 cents a bbl. above cost. If a man could catch them late in the fall he could make money on them.--(Roach).

Whitefish Bay.-- The fishermen fishing at the head of St. Mary's River take the herring to the Soo and sell them around Bay Mills and ship some to Minneapolis. The most, however, are sold locally. It is a small business. Believes the time will come when he will be trying to catch herring.--(Johnson).

St. Mary's River.-- They have just a local sale for the herring caught around the Soo and do not get many.--(Kirvan).

HERRING ~~GILL-NETS~~; MARKET, PREPARATION.

LAKE SUPERIOR.

West End.-- They freeze herring for winter. The A. Booth Packing Co. has a freezing apparatus.--(Kalmbach).

St. Mary's River.-- They bring the herring to the Soo and sell them around Bay Mills and ship some to Minneapolis, but the most of them are sold locally, what are sent away are shipped by rail.--(Johnson).

Port Arthur.-- They want the herring for the local market.--(Trombley).

MISCELLANEOUS.

FACILITIES FOR OBSERVATIONS THROUGH FISHERMEN.

LAKE SUPERIOR.

Grand Marais.-- The Connable Co. is willing to aid in scientific research in every way possible. He believes that the better class of fishermen are of the same mind, but found some fault because fish literature is not more widely distributed among the fishermen. The latter never fail to give data or information or aid the work in any other way, but they believe this data is pigeon-holed, or, if printed, is never distributed among the fishermen. Is sure that much valuable information is to be had yet and is sure that there is much room for scientific research. He will always be ready to help to forward it. This fish Company would be willing to board and lodge a naturalist every season, whose business it was to take notes concerning their catches in order that such notes might be accurate and reliable. The attention of himself and of the other fishermen is engrossed in catching fish and the details of the catch

escape their notice. The facts given by them concerning such are a mere matter of memory or of guess. Mr. Connable knows little concerning Natural History and advocated that the subject be studied by a competent man.-(R. Connable, Jr.).

EDUCATIONAL DUTIES OF GOVERNMENT.

Our Government has a system now of traveling dairies organized through the whole of the provinces, and it is helping the people very much. They show them how to make butter. They organize a committee of farmers and establish a system of instructions and teach them the way to make butter and cheese, and the consequence is that the province of Quebec, which was very much behind in every thing in that way, and were wedded to their old laws, are now coming forward, and in the place of getting about 12 and 14 cents for their butter are getting about 20 and 22 cents. It is the Federal Government that is doing this, although, of course, the local Government helps considerably in some places. I never heard of any instructions in fishery matters, any more than the hatcheries.

The pound net I suppose is the most modern, and that I suppose came from the brain of some ingenious fisherman. There is no educational system established for the fisheries. (Thomas Marks, Port Arthur, Ontario).

LAKE NIPIGON, ONTARIO.

We have been trying to induce our Government to allow us to fish gill nets on Lake Nipigon. The lake is teeming with whitefish and trout. I had a man go up there once and he said they were so thick they were becoming diseased. They claim it is a breeding ground for the speckled trout, but I claim it is not a breeding ground for them. You will not find them more than 3 or 4 miles from the mouth of the river. I claim that the breeding ground is in the river where it is stony and brushy. Wilmot is afraid, however, they will encroach upon the speckled trout in the river. And I said, cannot you have a line drawn 4 miles from the mouth of the river, and not let them go past that? This is a lake 120 miles long, probably double the size of the Lake of the Woods,

and there is a great industry there. I have caught diseased fish in these inland lakes, but I do not think I ever saw one in the Great Lakes. Dawson reported that there were 8,000 Indians fed out of the lake, but there are not 800. (Thomas Marks, Port Arthur).

CONCLUSIONS REACHED**BY A. J. WOOLMAN.**

DULUTH, MINN., November 30, 1894.

Mr. Richard Rathbun,

Washington, D. C.

Dear Sir:-

The conclusion at which I have arrived concerning the condition of the fisheries of Lake Superior, and the recommendations for the regulation and preservation of these fisheries are as follows:

1. Concerning the present condition of the fisheries of the lake. My investigations have led me to believe that the waters are fairly well stocked with food fishes of excellent quality, and that the greater number of fishermen derive at least a good living from their fishing, while ~~some~~ a few are acquiring wealth.

With few exceptions, I think the fishermen who industriously follows this means of support finds it quite as remunerative as the same amount of capital, labor, and business tact would be if invested and employed in channels

of business.

The general, but not universal, opinion of the fishermen of the lake is that the waters have been depleted. This depletion is estimated at from 25% to 500%.

The amount of the decrease is very difficult to determine, since the history of the fisheries of this lake shows that in nearly all localities the catch is very fluctuating, and that a good catch may be expected at almost any time. In the earliest development of the fisheries there were occasional seasons, or a succession of seasons, when very few fish were taken, and that at present larger runs some times occur than occurred in earlier years, but it is apparent that the large runs are fewer than formerly.

This diminution of the fishes of certain banks, feeding or spawning grounds, may mean one of two things: Either the fishes have been caught out of the water, or the schools that

were accustomed to, or occasionally haunted these grounds, have been broken up, or by other means have been made to leave the grounds.

Usually when fish suddenly leave a region some cause other than extensive fishing can be assigned, such as logging, milling, the throwing of filth into the water. Just how detrimental these several things are to the fishing grounds is impossible to state.

About the Apostle Islands and the south shore of the lake a heavy winter's logging brings a light year's fishing. Thunder Bay is believed to have been depleted by a certain class of fishermen throwing the remains of fish back into the water, and by other slovenly customs, while in the extreme western end of the lake increased amount of sewage and commerce is believed to have driven the fish away.

However, the damage from these several causes cannot be known until the habits of the fishes have been better studied.

Fewer extra large specimens of fish are taken now than formerly; this fact is frequently cited as a proof that the supply for the entire lake is much diminished, from excessive fishing. I do not think that the general supply of the fishes in the lake has been materially diminished, since the grounds over which fishing can be satisfactorily and successfully carried on is such a small percent of the area of the lake, it would be next to impossible to deplete the waters. It is noticeable that "fished out" areas soon recover almost their former fertility when left idle for a few years. The fish may return and occupy the grounds again in one, two or three years. It has also been observed that the fishes may suddenly leave a hitherto well supplied fishing ground, without any apparent cause, where there has never been excessive fishing. This is most noticeable about the channels and bays of Isle Royale, where there

has never been excessive fishing, and where the aggregate amount of fish taken from year to year is practically the same for the amount of apparatus employed.

2. Means of replenishing and preventing the depletion of the waters.

Concerning this subject, many plans have been discussed and on different sections of the lake many methods have been employed.

Following are the plans usually discussed or adopted in various sections and states.

1. A close season extending through one or more years.

2. A close season during a part of the year, the spawning season.

3. The reservation of certain breeding grounds, on which fishing is permanently prohibited.

4. The regulation by law of the mesh of the various nets used.

5. The limiting or prohibiting of certain apparatus.

6. The dividing of the fishing grounds into sections and the apportioning of these among the fishermen.

The first method is frequently employed in protecting game, but I think could not be strongly recommended in protecting fish in so large a body of water and where commercial fishing is extensively carried on, since it would necessitate a change in occupation of many of the fishermen, and many could not afford to retain extensive outfits during the close season.

Much may be said in favor of the close season during the spawning time. However, on Lake Superior, nature has provided somewhat of a close season, except in the few sheltered places. The October and November storms prevent extensive fishing along the south shore, and parts of the north. Furthermore, a close season in the fall of the year would be a hardship to many of the fishermen, since they

would be compelled to take up their nets, and the short time remaining between the end of the close season, if it were placed at the proper time, and the freezing of the lake would not justify a re-setting of their nets. Again, the fall fishing is that on which the fishermen depend for their profit. If the average fisherman more than clears expenses during the summer season he is very fortunate. Many of them keep a few nets in the water, and to give their help employment, taking only enough to clear expenses. During the late fall fishing a ton of fish can be handled and marketed at a less expense than it can during the summer months, besides the fish reach the market in better condition. If this, almost the only source of profit, be taken from the fishermen, it compels them to fish all summer, when, if they were permitted to fish as late in the fall as they desire, they could afford to almost cease operations during the warm

months, since they could take the fish at a much greater profit when they are on the reefs, and would be much benefitted even if the aggregate of the year's catch was not greater than if they had worked all summer, and so far as the replenishing of the lake is concerned, it matters but little whether a female whitefish be caught in August, before spawning, or in November while on the spawning ground, unless the difference be in favor of the November catch.

A reservation of certain banks or breeding grounds might be productive of much good, providing the fishes were not too local in their habits; and such a reserve would invite more or less poaching.

Likewise, I believe that the regulation of the mesh and the kind ~~of~~ and amount of apparatus fished might be made to be almost self-regulating.

The end to be attained by laws and regula-

- tions is the betterment of the fisheries, and hence the gain to fishermen and the consumers of fish. This should be done in the most simple, thorough, ~~and~~ effective, and inexpensive manner. This end may be accomplished, or at least much may be done, I think, in one of, or in the following methods:

First, I would urge that all boundary waters, and all important streams and lakes on which two or more states border, be under the direct control of the U. S. Fish Commission, and that all laws for the controlling of the fisheries of these waters be enacted and enforced by this bureau. First, the U. S. Fish Commission is more competent to enact suitable laws than is the various state legislatures. Second, the laws would be more respected. Whenever a state game warden attempts to enforce the law, he is almost invariably accused of partiality and the law breaker believes himself the victim of a

personal enmity and resents the warden's efforts to enforce the law in that spirit, and the sentiment of the other fishermen and of many of the people of the state ^{is} ~~are~~ too frequently with the offender.

First, I would advocate artificial propagation to as great an extent as possible.

Second, I would advocate a dividing or platting of the fishing grounds of the lake, allowing a shore line of not less than three miles nor more than five miles for each division and let these various sections extend from the shore toward the middle of the lake for a certain prescribed distance. The exclusive right to fish upon these for a period of three or five years I would sell to the highest bidder, as the fairest means of apportioning out the grounds.

This method would have many advantages: First, its simplicity and the ease with which laws could be enforced. Second, it would

prevent the present reckless piratical methods of fishing, which at present are practiced in the United States.

Third, it would systematize the industry where no system has ever been or can be while every man is permitted to go wherever he pleases and fish as he chooses. The total lack of system or control has bred a roving class of fishermen that can scarcely be said to have any place of residence, neither are they under any restrictions. Imagine the result upon an agricultural district, and upon the farmer, if such a method were pursued, and yet I doubt if such a policy would be more detrimental to the soil, and the farmer, than it is upon the fisheries and the fishermen.

It would create a stability, a place of residence, an independence, and a dignity in fishing that has hitherto been unknown.

It would make every fisherman responsible to a certain extent for the condition of his

fishing grounds, while under the present method no responsibility is even felt by a fisherman.

It would remove the necessity of a multitude of minor regulations, such as size of mesh, time of fishing, etc., for I would allow each man to employ whatever kind of, and amount of, apparatus he chose. I would also allow him to fish whenever he chose, with a possible restriction concerning the size of the fish taken from the water and offered for market. No man will over-fish to any very great extent his own grounds, nor will he fish at a loss.

This method would protect the fishermen from themselves, and their neighbors, which is one of the aims to be attained. It would also yield a sufficient amount of revenue to make the system selfsupporting.

A third recommendation I would urge is a thorough and systematic collection of scientific facts and data, extending through a number of

years, concerning the habits and catch of the various food fishes.

Very truly,

(Signed) A. J. Woolman.